

September 1976 30p

**AIRFIX**

*magazine for plastic modellers*

**Inside:** Horsa glider colour schemes, modellers' diary, Arms Fair report, armoured trains and Napoleonic shakos



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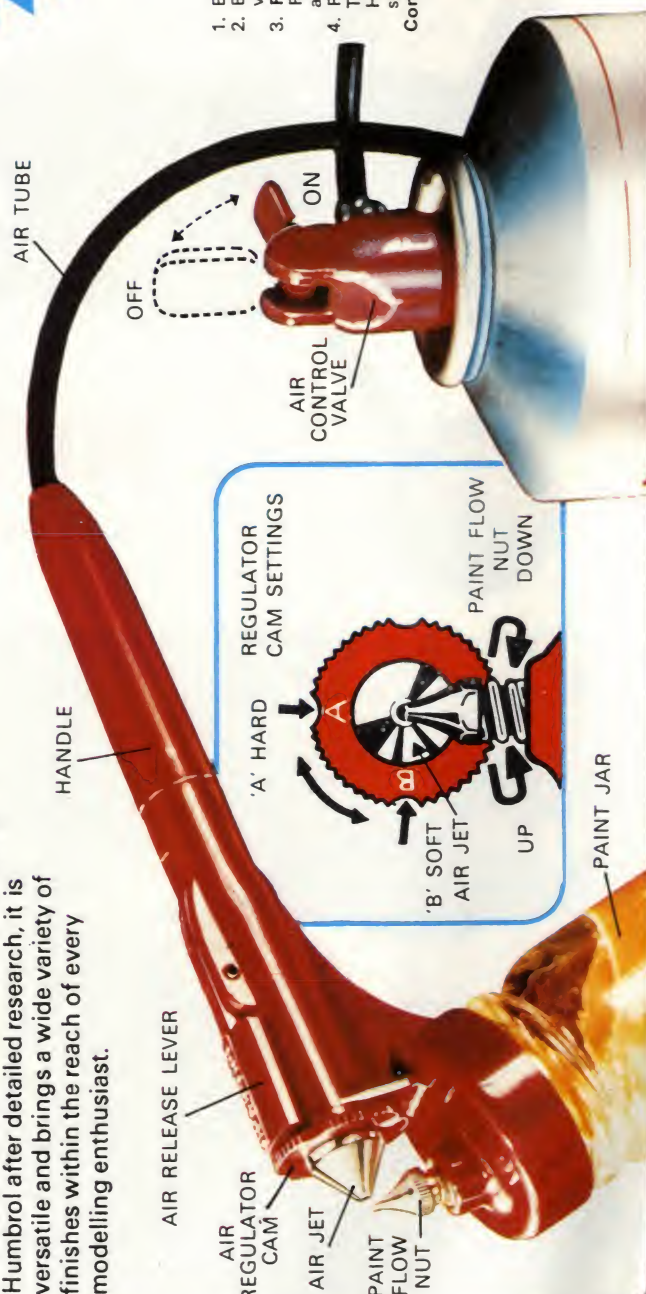
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**AIRFIX** magazine for plastic modellers

September 1976 Volume 18 No 1

Editorial Director **Darryl Reach** Editor **Bruce Quarrie** Art Editor **Tim McPhee**  
Editorial offices Bar Hill, Cambridge CB3 8EL. Telephone *Crafts Hill* 80010

### On the cover

**Top** Beautiful painting of a Home Defence Camel F1/3 of No 44 Squadron, equipped and finished as a night fighter with twin Lewis machine-guns in a Foster mounting, from Martin Holbrook. Construction of a model of this machine is described on pages 28-32 inside by Bryan Philpott in the first of our new series of articles on modelling night fighters. Next month, World War 2 single-seaters — the Defiant, Messerschmitt Me 109 and Focke-Wulf Fw 190. **Lower left** The new British Infantry Weapon being demonstrated by an instructor at Warminster (MoD). Terry Gander provides a description and more photos of this weapon on pages 42-3. **Lower right** Attractive shot of HMS *Antelope*, second of the Royal Navy's Type 21 Frigates, photographed by L/A Tony Thomas of HMS *Daedalus* (MoD).

### Contents

<b>Modellers' Diary</b> Historical events linked to Airfix models for the month of September by <b>Brenda Ralph Lewis</b>	11
<b>Air, Land and Sea</b> Aldershot Army display and Arms Fair, USAF Open Day reports and other items of interest to modellers	12
<b>Maxim gun truck</b> The 'sting in the tail' of the Boer War armoured train modelled by <b>Terry Wise</b>	22
<b>British Army uniforms</b> Headgear 1812-1815 by <b>Bryan Fosten</b>	24
<b>Night fighters</b> First instalment in this new series describes how to model a Home Defence Sopwith Camel by <b>Bryan Philpott</b>	28
<b>Hungarian armour</b> The Turán I and its derivatives during World War 2 described by <b>J. C. M. Probst</b>	32
<b>Army-air colours</b> Enter the Horsa by <b>Michael J. F. Bowyer</b>	36
<b>Infantry weapons for the 1980s</b> New British developments outlined by <b>Terry Gander</b>	42
<b>Squadron codes and colours</b> by <b>Michael J. F. Bowyer</b> and <b>John D. R. Rawlings</b>	44
<b>Talking Wargaming</b> Terrain by <b>Donald F. Featherstone</b>	45
<b>New kits and models</b> Reviewed by modellers for modellers	46
<b>Book reviews</b> New publications of interest to modellers	50
<b>Letters to the editor</b> Your chance to win a free Airfix kit	52

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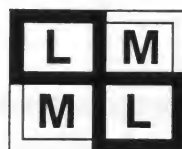
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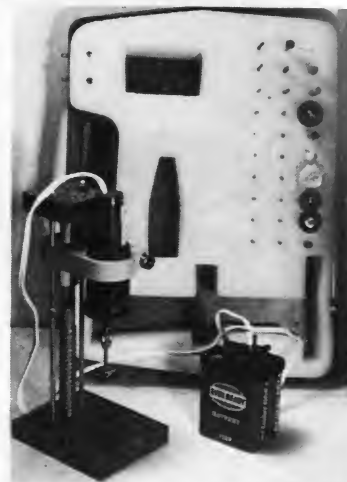
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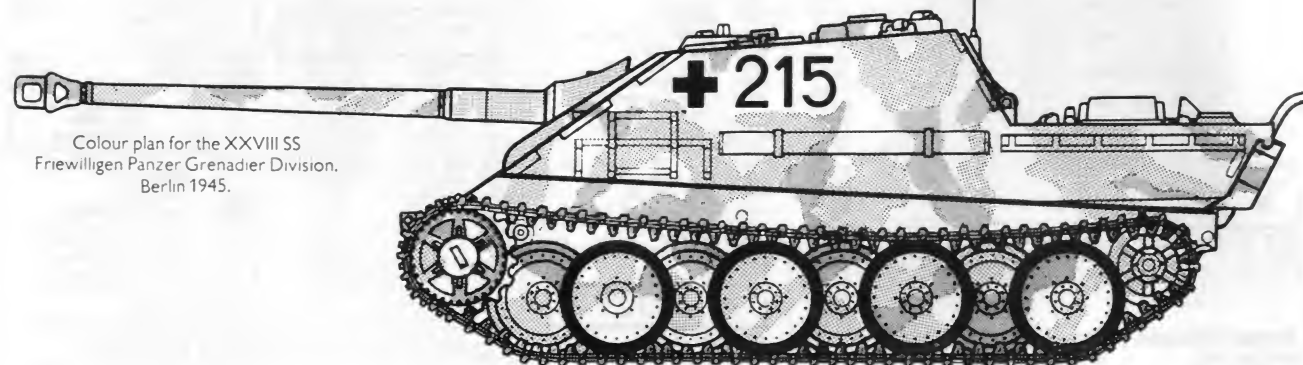
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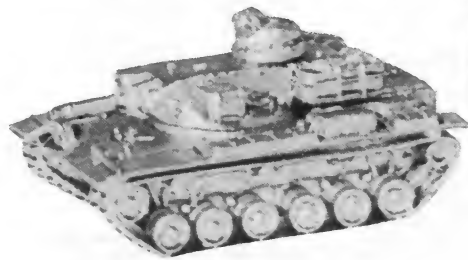
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#### GREEK

G1	Officer cloak and double crested Corinthian helmet
G2	Standard Bearer
G3	Hoplite Corinthian helmet in reserve
G4	Hoplite Corinthian helmet attacking
G5	Trumpeter
G6	Peltast unarmoured with Hoplite shield spear attic helmet attacking
G7	Slinger
G8	Archer armoured taking arrow from quiver
G9	Sythian Mercenary Archer unarmoured drawing bow
G10	Spartan Hoplite cloak crested Pilos helmet in reserve
G11	Spartan Hoplite cloak crested Pilos helmet attacking
G12	Theban Hoplite attic helmet attacking
G13	Peltost small shield javelin and Thracian helmet
G14	Theban Hoplite attic helmet in reserve
GC1	Cavalry Officer
GC2	Cavalry Standard Bearer
GC3	Cavalryman armoured shield and spear Corinthian helmet
GC4	Cavalryman unarmoured shield and spear Boccian helmet
GC5	Cavalryman armoured with javelin attic helmet

#### ROMAN EMPIRE

RE1	Tribune on foot
RE2	Centurion advancing
RE3	Signifier
RE4	Cornicer
RE5	Aquillifer
RE6	Legionary attacking
RE6A	Legionary marching
RE7	Auxiliary with shield and spear attacking
RE8	Auxiliary Slinger
RE9	Auxiliary with shield and javelin
RE10	Auxiliary Asiatic armoured archer
REC1	Cavalry Officer
REC2	Cavalry Standard Bearer
REC3	Cavalryman armoured with spear and shield
REC4	Cavalryman leather armour with shield and javelin

#### ROMAN REPUBLIC

RR1	Standard Bearer
RR2	Centurion
RR3	Trumpeter

RR4	Princes mail coat large shield and spear in reserve
RR5	Hasiati mail coat large shield and pilum
RR6	Triari leather armour large shield and spear attacking
RR7	Vetuli unarmoured small shield and javelin
RR1	Cavalry Officer
RR2	Cavalryman armoured with spear and shield
RR3	Cavalry Standard Bearer

#### CARTHAGE

C1	Standard Bearer
C2	Officer
C3	Drummer
C4	Citizen Spearman 1st class armoured shield spear in reserve
C5	Citizen Spearman 1st class armoured shield spear attacking
C6	Citizen Spearman 2nd class leather armour shield spear attacking
C7	Mercenary Balearic Slinger
C8	Mercenary Cretan Archer
C9	Mercenary Numidian Javelinman
C10	Libyan unarmoured spear shield attacking
C11	Spanish Scutari unarmoured large shield heavy javelin
C12	Gual Mercenary unarmoured spear shield attacking
CC1	Cavalry Officer
CC2	Cavalry Standard Bearer
CC3	Cavalryman armoured spear and shield
CC4	Cavalryman Numidian with javelin
CC5	Cavalryman Spanish unarmoured spear
S7	War Elephant armoured 3 crew

#### Assyria

A1	Officer armoured with sword
A2	Infantryman armoured with spear and shield attacking
A3	Infantryman armoured with spear and shield in reserve
A4	Standard Bearer
A5	Archer armoured firing bow
A6	Archer unarmoured drawing bow
A7	Infantryman with long mail coat with spear and shield and bow in case in reserve
A8	Unarmoured Infantryman with spear and shield attacking
A9	Armoured Slinger
A10	Unarmoured Slinger with shield
A11	Infantryman in long mail coat with shield and spear and bow in case attacking
A12	Unarmoured Infantryman with shield and spear in reserve

AC1	Cavalry Officer
AC2	Cavalry Standard Bearer
AC3	Armoured Cavalryman with shield and spear
AC4	Armoured Cavalryman with shield and spear and bow in case
AC5	Unarmoured Cavalryman with shield and spear and bow in case
S19	Heavy Chariot with 3 crew

#### Persia

PE1	Officer
PE2	Standard Bearer
PE3	Immortal attacking
PE4	Infantryman unarmoured spear and shield and bow in case attacking
PE5	Immortal in reserve
PE6	Immortal firing bow
PE6A	Shield hung on spear planted in ground for PE6
PE7	Infantryman unarmoured shield and javelin
PE8	Infantryman unarmoured shield and javelin
PE9	Infantryman unarmoured firing bow
PE9A	Shield hung on spear planted in ground for PE9
PE10	Armoured Infantryman spear and shield attacking
PE11	Phrygian armoured with crested helmet: spear and shield attacking
PE12	Phrygian armoured with crested helmet spear and shield in reserve
PE13	Phrygian armoured with crested helmet with double headed axe
PEC1	Cavalry Officer
PEC2	Cavalry Standard Bearer
PEC3	Cavalryman unarmoured spear and shield with bow in case
PEC4	Cavalryman unarmoured with spear and bow in case
PEC5	Cavalryman armoured with spear and shield
PEC6	Clibanarius spear shield bow in case on armoured horse
PEC7	Camel Corps armoured spear and shield with bow in case armoured camel
PEC8	Camel Corps unarmoured spear and shield with bow in case unarmoured camel
S20	Sythed Chariot with 2 crew

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# MODELLERS' DIARY

Compiled by  
**Brenda Ralph Lewis**

## September 6 1620

ON SEPTEMBER 6 1620, the square-rigged sailing ship *Mayflower* (Airfix model No 08253-6) set sail from Plymouth bound for the New World of America. In America, the 102 passengers, who included 35 Puritans, hoped to live free from religious persecution. These people, enshrined in present-day American folklore as the 'Pilgrim Fathers', landed on the coast of Massachusetts and the first thing they did was to fall on their knees and give heartfelt thanks to God for their safe arrival. Well they might. Braving the Atlantic in 1620 was not the mundane, everyday affair it is now. The *Mayflower's* journey lasted 66 storm-wracked days and they were days spent in crowded discomfort and distress. For the *Mayflower* displaced only 170 tons and was a mere 90 feet long, 26 feet in the beam and had a keel measuring 64 feet. The chances of reaching America at all were uncertain, because *Mayflower* was not built for the rigours of ocean sailing and its navigational instruments were pretty primitive. They consisted of a cross staff, traverse board and wooden compass bowl. In these circumstances, reaching America must have seemed something of a miracle, particularly to people like Puritans who were so strongly motivated by religion.

## September 7 1533

KING HENRY VIII was furious when his second wife, Anne Boleyn, gave birth to the future Queen Elizabeth I (Airfix Model No 03543-1) on September 7 1533. Henry, who already, had a daughter, Mary, by his first marriage had wanted a son to succeed him on the throne of England. With good reason, he believed that only a king could protect England against her foreign enemies and preserve her against rebels at home. Henry never knew it, because Elizabeth was only 14 when he died, but his second daughter proved to be one of the strongest, most brilliant monarchs England ever had. Elizabeth became Queen of England in 1558, after the death of her half-sister Mary, and at once demonstrated remarkable ability in attracting loyalty from her subjects. To them, she was 'Good Queen Bess'. Elizabeth drew England's cleverest men to her court, including the

World War 1 tank.



sailors John Hawkins and Francis Drake and the writer and explorer Walter Raleigh. Intelligent, cunning and a devious politician, Elizabeth protected England throughout her reign against the machinations of her Spanish and French enemies. In the 45 years she was queen, England emerged as a power to be reckoned with and historians agree that 'Good Queen Bess' was the inspiration that made this so.

## September 13 1942

SEPTEMBER 13 1942 was the day on which the Germans began their all-out attack on Stalingrad, an important industrial city on the River Volga. Few battles in World War 2 matched the battles for Stalingrad (Airfix Battlefront Models Nos 40655-2/40656-5) for violence, bloodshed and devastation. The task of capturing this vital objective was given to a top-flight German army — the Sixth — and a brilliant commander — General Friedrich von Paulus. However, the Russian defenders put up near-maniacal resistance and though, by the end of September 1942, the Germans had managed to establish themselves in the city, they had



Stalingrad.

had to struggle hard every inch of the way. In all the Germans lost 150,000 men. Soon, Stalingrad was nothing but heaps of smoking rubble and its inhabitants were homeless and destitute. Then, on November 19, a Russian army counterattacked, and the Germans inside the city were surrounded. Before long, von Paulus and his men were starving. The merciless cold of the Russian winter increased their sufferings. Ammunition and fuel ran low. By January 1943, the German position was hopeless. On February 2, a gaunt, grim-faced von Paulus surrendered to the victorious Russians together with all that remained of the Sixth Army. The battles for Stalingrad, which the Germans had arrogantly supposed they could take quite easily, had lasted a harrowing six months.

## September 15 1916

ON SEPTEMBER 15 1916, during the third year of World War 1, a new and terrifying weapon was used for the first time. That day, 11 31-ton tanks (Airfix Model No 01315-2) took part in the battle of the River Somme in France. These tanks resembled lumbering unwieldy oval boxes. They measured some 26.5 feet in length and 13 feet 9 inches in width, moved at about 3.7 mph and had armour plate about half an inch thick. They were intended to counter



Mayflower.

the rapid, deadly fire of German machine-guns, but they also had daunting firepower of their own. Some carried six machine-guns, others four machine-guns and two 6 pdr guns. Their caterpillar tracks enabled them to roll with ease over obstacles up to 4.5 feet high, to climb slopes measuring up to 22 degrees and to 'jump' trenches 11.5 feet wide. When they first appeared, the British tanks provided something of a shock because they had been produced in deepest secrecy. At the experimental stage, the hull and chassis had been built in separate shops and given 'cover' names. The chassis, for instance, was supposed to be a Royal Marines 'demonstration model'. The hull was called a water carrier. The workmen, however, christened the hull 'that tank thing' and the name stuck.

## September 26 1580

WHEN FRANCIS DRAKE'S famous ship the 100-ton, 18-gun *Golden Hind* (Airfix Model No 01264-5) docked at Plymouth, Devon on September 26 1580, it had not only completed the first circumnavigation of the world by Englishmen, but had made one of the most exciting and dangerous voyages of Elizabethan times. The danger came from the Spaniards who had forbidden all foreigners to venture near their American colonies. Drake, however, cared nothing for the Spaniard's threats. He sailed from Plymouth on December 13 1577 and braved the hurricanes of the Brazilian coast and the swirling tides and headwinds of the Magellan Straits to raid Spanish settlements, capture Spanish treasure ships and terrorise Spanish colonists. Drake captured a fortune in goods and valuables including the largest single booty ever taken up to that time: £500,000 in gold, silver, jewels, pearls and coin from the holds of a Spanish treasure galleon hijacked off the coast of Peru. After Drake returned to England, he was knighted as a reward by Queen Elizabeth I and the *Golden Hind* was declared a national monument. Sadly, over the years, its timbers rotted away, but some of the original wood still exists today, in a chair at Oxford and a table in Middle Temple hall in London. □





## Air, land and sea

compiled by the editor

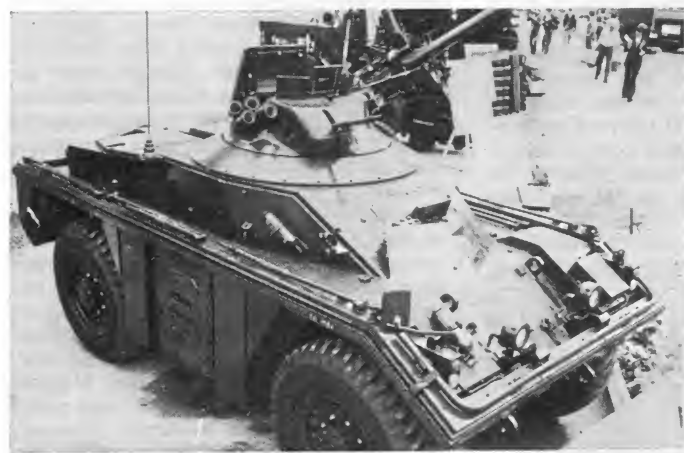
### The Aldershot shows

TO MANY military enthusiasts the month of June means the Aldershot Army display and in view of the excellent spreads of equipment, pageantry and uniforms placed on show in the past the show has become more and more popular. This year's display was a little different in that while the Army put on their usual magnificent array of goodies, just

Continued on page 14



**Above** The Shorland Mark 3 armoured patrol car. As well as being in use in Northern Ireland this three-man vehicle is in use with many other nations, and its close relative, the SB 301 armoured personnel vehicle, was also on show. **Top left** The Combat Engineer Tractor (FV180) is seen here with a section of Class 30 Trackway which it proceeded to lay soon after this shot was taken. The CET will soon be in widespread service with the Royal Engineers. **Left** One surprise on the Royal Ordnance Factories stand was this Fox with a GPMG turret. It is thought that this may turn out to be a replacement for the Vixen reconnaissance vehicle that was 'chopped' in the recent Defence Cuts. **Below left** Best part of the show — the incomparable King's Troop of the Royal Horse Artillery with their 13 pdr guns. **Below** A Class 30 Trackway layer minus the Trackway. **Bottom** One of the more novel vehicle/weapon combinations in the static park was this combination of an Argocat and the Swingfire anti-tank missile. This little amphibious vehicle is light and can traverse snow, sand and mud and can be slung from a helicopter. It can thus be seen to be a viable little launch vehicle for the potent Swingfire missile. Only two men would be needed.



## AIRFIX NEW MODELS FILE

## WESTLAND-AEROSPATIALE LYNX

The Westland-Aerospatiale Lynx, multi-role helicopter will form a large percentage of the British armed forces helicopter units. Lynx's manoeuvrability will enable it to fly 'pop up' missions in the tactical role: that is to rise rapidly from cover, fire its missiles and return to concealment.

Large-scale production is underway for the Army Air Corps and the Royal Navy, and for overseas customers in the Middle East and the navies of France, the Netherlands and Brazil. An advanced technology helicopter, the Lynx is the result of a successful Anglo-French partnership begun in 1967 and now involving the two largest helicopter firms in Europe, Westland Helicopters in Britain and Aerospatiale in France.

Known initially as WG13, the Lynx was designed under the leadership of Westland and with both an army and navy requirement to meet, a helicopter with a high degree of versatility and commonality was called for. Two basic versions are in production, the utility or army Lynx and the naval Lynx. Both appear similar but differ in detail.

The missile operator sits in the left-hand seat, alongside the pilot, controlling the missiles via a stabilised sight. Guns, rockets and cameras can be carried and in the transport role a section of ten men can be ferried 450m. or a 3,000lb. load, such as a

field gun, can be lifted in a sling below the fuselage. Lynx's performance was demonstrated in June 1972 when it set a new world speed record in its class of 200m.p.h. A further remarkable feature of the machine is its ability to perform a positive g roll, a manoeuvre few helicopters can do. The secret behind this is the advanced semi-rigid rotor head which gives a marked increase in control characteristics.

The Airfix Lynx is exact in every detail and features the army version. Nearly one hundred different parts go to make this exciting kit and it comes complete with its two-man crew, sliding doors, missile containers on pylons and two rotating rotors.

For up-to-date news and details of Airfix models get the Airfix magazine.



**Westland-Aerospatiale Lynx (army)  
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New to the world's biggest range  
of construction kits.**

### Technical Details

Date of origin: 1967.

Engine: Twin Rolls-Royce BS.360 Gem turbines.

Top Speed: 200m.p.h.

Hovering Ceiling: 12,000ft.

Rotor Diameter: 42ft.

Fuselage Length: 38ft. 3 1/4 ins.

## WILD CAT STRIKER.







**Above left** The Sampson Armoured Recovery Vehicle based on the same chassis as that used by the Scorpion and Scimitar. All the variants of this family were on show in the static, including the Samaritan ambulance, the Sultan command vehicle and the Spartan APC. The Striker missile launcher was also in evidence. **Above right** A crew-served weapon sight L3A1 fitted to a Wombat. These night sights can be used as night vision devices as well as weapon sights, and many of them are being used in Montreal for security purposes during the Olympic Games.

a short distance from the main arena was another attraction, the Defence Industries Exhibition.

This exhibition was not open to the general public as it was intended to be a 'shop window' for visiting delegations from overseas who might be in the market for the vast range of defence equipment produced by British firms. The range of this equipment is truly staggering. Everyone expects to see the

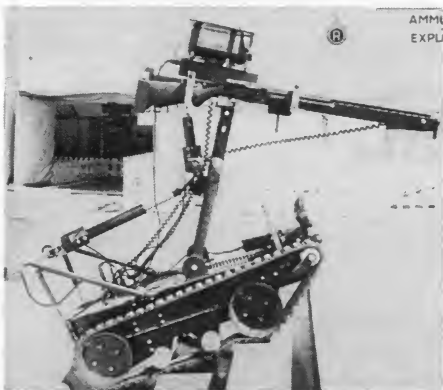
usual tanks, guns and the like but who would have thought that the defence industries would turn out such a varied and bewildering array of military bits and pieces.

Apart from the usual rows and racks of electronic gear, there were stands showing webbing (the 1937 webbing is still being made for export), smoke flares, air rifles (for cheap training), barbed tape for entanglements, special armoured suits for bomb dis-

posal, inflatable tanks and lorries (please state requirements — a PT76 was on show), fibre boxes for stacking, and demolition charges. The list could go on for several pages — the catalogue runs to over 180 pages — but here we can do no more than show just a small selection of the static show and the attendant mobility display held at Long Valley nearby.

**Continued on page 16**

**Below left** One of the versatile Wheelbarrow bomb disposal vehicles showing its stair-climbing paces. These versatile little machines can be fitted with a range of devices many of which are still under security wraps but this one is fitted with an automatic shotgun, a TV camera, a spotlight, and a 'nudger' for breaking glass or opening doors. To date some 16 have been lost on operations — that means 16 lives saved. **Below right** The usual method of unloading the bridge sections from this Bedford is to attach the bottom section to a stake and drive the vehicle away. The bridge is a 9M Single-Storey Bridge. **Bottom** A Gazelle makes a dusty landing next to a Field Refueller.



## AIRFIX NEW MODELS FILE

## BUGATTI TYPE 35B

A classic racing car in every sense of the word, the Grand Prix Bugatti Type 35 was a legend in its own lifetime.

It can claim more than 2,000 racing successes during its period of manufacture between 1924 and 1931, and in fact was built in greater numbers than any other racing car — almost 400 of all versions.

Ettore Bugatti, an Italian-born car engineer with a flair for design and a love for fast cars, evolved the Type 35 from his earlier unsuccessful 1923 Type 30 8-cylinder car. The appearance of the Type 35 at the 1924 European Grand Prix at Lyons was nothing short of sensational. It retained the 2 litre 8-cylinder engine, had cast aluminium wheels with eight flat spokes and a superbly finished body tapering from the tail, which housed the 22 gallon petrol tank, to a slim German silver radiator.

A number of versions were built including 1.5 lit, 2.3 lit, and a 2.3 lit, super-charged model known as the Type 35B. This car had larger brake drums, bigger tyres and an enlarged, repositioned radiator. Driven in its heyday

by such figures as Louis Chiron, Malcolm Campbell and Tazio Nuvolari, the Type 35 is still raced today in small numbers.

The Airfix Bugatti is a perfect replica of the original. It contains over 100 pieces including a driver complete with goggles and racing head gear.

You can either make a racing version with this kit or road version with all the intricate details right down to the registration plate. It's even got a spare wheel for emergencies!

For up to date news and details of Airfix models get the Airfix Magazine.

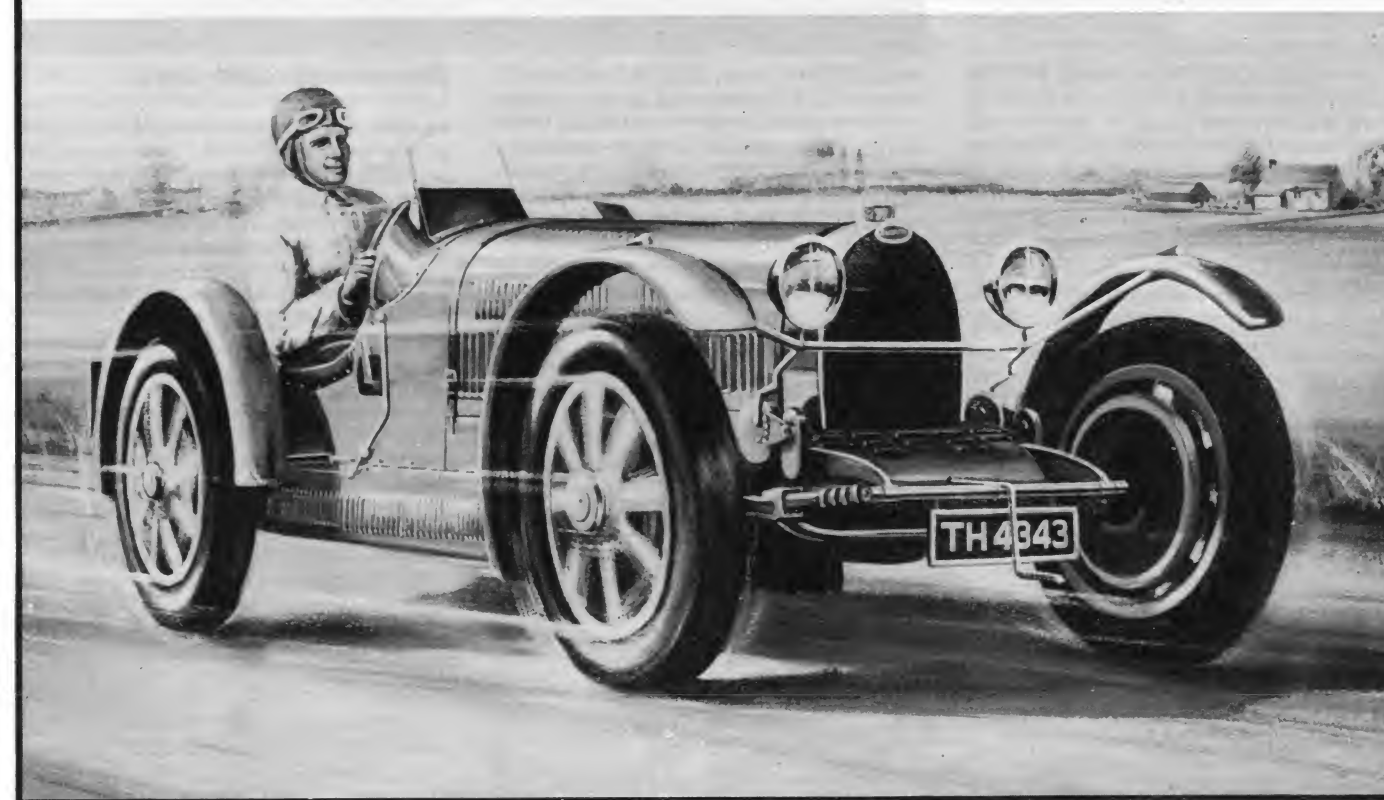


**Bugatti Type 35B.  
1/32nd Scale Series 3.  
New to the world's biggest range  
of construction kits.**

### Technical Details

Date of origin:	1924.
Engine:	2.3 litres 8-cylinder.
Tank capacity:	22 gallons.
Top Speed:	120 mph.
Gears:	4 forward and reverse
Wheel Base:	7ft. 10½ ins.
Track:	4ft. 1 in. (front) 3ft. 11 ins. (rear)
Length:	12ft. 1 in.
Height to scuttle:	3ft. 6 ins.
Weight:	1650 lbs.

## A LEGEND IN ITS OWN LIFETIME.







**Top left** One Vickers product on show was the Falcon Low Level AA Defence System. This is based on the well-known Abbott chassis and is armed with two 30 mm Hispano Suiza Type 831L cannon. **Top right** Another Vickers product on show was the Main Battle Tank. This tank is not often seen in displays, but it has been sold abroad to such states as Kuwait (who has now ordered Chieftains to replace them) and it is being built in India. The gun is the British 105 mm L7A1. Colour scheme on the example shown was red-brown and cream. **Above left** In the Army Display was this Milan anti-tank missile which is now under evaluation by the infantry. **Above right** The GKN AT 105 Armoured Personnel Carrier, designed for internal security tasks. This vehicle is based on the well-tried Bedford engine and chassis, and can carry ten men.

With all the Defence Industries array to hand one would have thought that the Army Show was eclipsed but such was not the case. As ever the Army put on a superb show, with much to see that was unusual or new. One of the stars of the show was the FH70, but elsewhere one could see the latest mods to the Chieftain, the new Land Rover with the

new 105 mm Light Gun, and such novel things as the Ranger mine projector. In the arena the bands made plenty of music, motor cycles and helicopters came and went, and the Kings Troop, in full force, were magnificent. Again, there is space for only a small selection of photographs, but on with those. *Terry Gander*

A Chieftain Bridge-Layer having just placed its bridge, trundles across a Medium Girder Bridge. Note that this vehicle is fitted with two GPMGs for self-defence.



### Bicentennial open days

1976 MARKS 200 years of American Independence, and as part of the celebrations the USAF opened the gates of RAF Upper Heyford on July 3, and of RAF Mildenhall on the following day, and the static aircraft displays at both venues were a delight for modern military aviation enthusiasts.

Fighter aircraft were the dominant theme at Upper Heyford, the most eye-catching being an A-6E Intruder of VA-176 and an A-7E of VA-15, both from USS America. However, even these were outshone by a CF-104 of No 439 Squadron, CAF, from Sollingen in Germany. This was finished in an all-over livery of black and yellow stripes, to celebrate the recent NATO 'Tiger Meet'. There was a total of eight Starfighters on view, from the Air Forces of Canada, West Germany, Norway, Belgium, Denmark and the Netherlands.

An F-111E of the resident 20th TFW bore special Bicentennial markings on the fin, whilst an RF-4C from the 10th TRW carried an underwing pod with markings on the same theme. Other notable items included an OV-10A Bronco from the 601st Tactical Control Wing at Sembach, Germany, a two-seat Draken and an F-100F from Denmark, an F-5A and an F-5B from No 314 Squadron, RAAF, a Belgian Mirage 5BA, a



This superb black and yellow CF-104G Starfighter came from No 439 Squadron, 1st Canadian Air Group. The lower shot shows forward fuselage detail, including the black, outlined white, nose code.



Transall and a Do 28D of the Luftwaffe, together with a Harrier and a Jaguar from the RAF. Newest machines on show were an F-4E serial 74-041 coded CR from the 32nd TFS, and an F-5E from the 527th TFTAS at Alconbury, sporting a two-digit nose-code.

The flying display held less interest, but included formations of F-4s and F-111s, and the Belgian Air Force provided aerobatics with two SF-260Ms, and the 'Diablos Rouge'

formation team on Magisters. The RAF sent a Jaguar, and a camouflaged Lightning of No 11 Squadron.

Next day, at Mildenhall, the emphasis was on larger machines, with a C-5A Galaxy dominating the area. Also on show were a C-141, a KC-135, a new C-130H Hercules of the 774th TAS/463rd TAW, Dyess AFB, Texas, and a West German Navy Atlantic. Many of the machines at Upper Heyford the previ-

**Below left** Black and white checks on the rudder of Phantom FG 1 XV579/R of No 43 Squadron, RAF Leuchars, seen at Mildenhall. **Below right** Special bicentennial underwing pod fitted on the inner pylon of RF-4C Phantom 68-555/AR of the 10th TRW. White overall with red (front) and blue diagonal bands. Bicentennial star has red outline with blue inner star. Rear panel is blue with black inscription 'COL PAUL H. HODGES 10 TRW COMMANDER RAF ALCONBURY ENGLAND'.







Left From VA-15 on the USS America came this A-7E Corsair II. Fin is white, fuselage grey and white. Fin flash, lion and stars on rudder are all blue with yellow outline. Fin code 'AE' and nose code '306' are blue with yellow upper right shadow. Code '06' on fin tip is black, as are codes '306' on flaps. VA-15 title on jetpipe is medium blue. Below left Special Bicentennial markings on the fin of F-111E 68-028. Basic colour is white, fin tip is red (top) white and blue. Flag has red horizontal stripes, square is blue with white stars and '76'. Leading edge flashes are red (front) and blue. The large 76 is red; disc within the 6 is blue with white stars. The years are in blue. Below A-6E 159576 of VA-176, USS America.



Hawker Hurricane in a marsh in Kent, and has grown since then with the unearthing of over 350 Battle of Britain crash sites in Kent, Essex and Sussex. The museum, a private venture, comprises a selection of the most interesting exhibits discovered, ranging from dashboard panels to engines and propellers, together with supporting photographs, correspondence, badges and other aeronautical relics. Housed in a converted stable, it is well worth visiting for the detail information which can be acquired through an examination of the exhibits. Bruce Quarrie.

### Diamond jubilee

NO 43 FIGHTER Squadron celebrated its 60th anniversary on June 5 and 6 at RAF Leuchars. Formed at Stirling on April 15 1916, the unit has always been a fighter squadron but it wasn't until the mid-1920s that the Gamecock emblem was chosen for the squadron crest.

43 can claim quite a number of 'firsts' in the Royal Air Force, namely in their operation of the Fury in May 1931, the Hunter in 1954 which it flew in various marks until 1967 (and

Left A complete flying suit from the Battle of Britain which is now preserved at the London Air Museum. Also on show there are the instrument panel from Spitfire flown by Sergeant D. Cox which crashed on September 27 1940 (below), and the propeller from a 222 Squadron Spitfire which crashed in Essex on September 3 1940 (right).



also formed the first Hunter aerobatic team) and latterly the Phantom FG1 in 1969, which type it still operates.

The weekend festivities included an open 'families day' when squadron and visiting aircraft were on view. Flying was restricted to a solo Phantom and a display by one of the Battle of Britain flight Spitfires, although the departure of some visitors did increase the flying activity.

43 are yet again providing Strike Command's Phantom display, and the aircraft should be seen at many shows this summer in the hands of Squadron Leader Ian McFadyen and Flight Lieutenant Norman Browne.

In the squadron hangar a number of aircraft were displayed, including the first Wessex HC2 for 'B' flight of 22 Squadron. Others included a pair of F-104Gs of 1 Wing BAF Beauvechain, Buccaneer S2 from 12 Squadron, a Hunter FGA 9 in an unusual grey and red colour scheme (with a camouflaged fin) from Boscombe Down, the beautifully restored and 'corn earning' Meteor F8 in 615

Continued on page 20



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**Top** 43 Squadron's solo display Phantom XV579/R seen at Lossiemouth on July 2 by Alan Carlaw, sporting white checks as also noted by Peter Guiver at Mildenhall. **Above left** West German F-4F 37+51 of JG71 'Richthofen' in an experimental camouflage scheme of grey and blue light absorbing paint, also seen at Leuchars. **Above right** 43 Squadron's 60th anniversary 'zap' as applied to all visiting aircraft.

Squadron colours from Brawdy, and the F-4F of JG71 (Richthofen) in an experimental blue and grey overall camouflage scheme. Every visiting aircraft was 'zapped' with the 60th Anniversary squadron stencil and numerous cars were seen leaving the station sporting a black and white chequered sticker proclaiming 'Fighting Cocks do it better!'

At a party in the Mess later that day Commanding Officer, Wing Commander Roger Palin, together with present and past members made sure that the squadron was firmly established on its journey through the next

60 years.  
Alan Carlaw.

#### Leuchars visitors

UNUSUAL visitors at RAF Leuchars for ten days at the end of May were two A-6E Intruders and an EA-6B Prowler from USS Saratoga (CVW-3).

The aircraft were taking part in a joint maritime exercise over the North sea with other NATO forces. Their parent carrier however, was at that time in the Mediterranean.

The colourful appearance of these aircraft contrasted with the sombre camouflaged residents, and in fact each visitor carried a large emblem proclaiming the US Bicentenary.

Alan Carlaw.

#### Lakenheath 'tails'

THE McDONNELL F4-D Phantom aircraft based at RAF Lakenheath have recently been observed sporting a coloured fin tip. As aircraft with the same coloured fin tips have been seen grouped around squadron dis-



Seen in the Clyde estuary during contractor's sea trials is the nuclear powered Fleet submarine HMS Superb. She is the third of the latest 'Swiftsure' Class and has a maximum underwater speed in excess of 20 knots together with the ability to remain submerged for several weeks on end. Length 272 feet, beam 33 feet, complement 97 officers and men (HMS Neptune).



HMS Jersey (MoD).

persals, speculation has been that the squadrons which make up the 48TFW had started to mark their aircraft with a squadron in Wing colour. Some of the Wing crews were also under the impression that this was so, and have started to adopt aircraft as being their squadrons.

The Squadron whose markings these are, however, does not in its normal duties fly. This is the 48th Organisational Maintenance Squadron, which is divided into three sections.

Maintenance Section 1 has the 'blue tail' aircraft, and these are parked adjacent to the hardstanding of the 492 TFS. The same applies to Section 2 with its 'yellow tails', who park their aircraft adjacent to 493 TFS dispersal. Section 3, which parks its aircraft near to 494 TFS, maintains the aircraft with 'red tails'.

The responsibility of Wing maintenance rests with the Chief of Maintenance of the 48 TFW, and the aircraft are allocated to the Maintenance Sections in numerical order, and this, together with computer records on the Wing's aircraft, help to keep the 47th TFW at full operational strength at all times.  
Bill Beeson.

#### HMS Jersey launched

HMS JERSEY, first of the Royal Navy's new purpose-built offshore patrol ships, was launched by Princess Anne at Aberdeen on Thursday March 18.

It was announced last year that five new offshore patrol ships — to be known as the 'Island' Class — were being ordered for the Royal Navy from Hall Russell. HMS Jersey will be followed by Guernsey, Shetland, Orkney and Lindisfarne.

While their principal role will be to protect Britain's offshore gas and oil installations, they will also be employed on a variety of offshore tasks including fishery protection duties.

As an interim measure two specially adapted ships are at present carrying out these duties — HMS Reward, a former naval tug, and HMS Jura, a fishery protection vessel on loan from the Department of Agriculture and Fisheries, Scotland.

The new 1,000 ton ships, about 200 feet long and similar in design to HMS Jura, are lightly armed, fitted with comprehensive naval communications, and powered by two diesel engines. There will be accommodation for at least 40 personnel on board.

For several centuries the Royal Navy has undertaken various tasks at sea in support of the civil authorities. In the past, they have for the most part been able to carry out these duties with the same resources as they use for their primary responsibility of countering external aggression. While this will continue to be the case, the growing importance of our offshore oil and gas resources and the possibility of a general extension of fishing limits has created the need for a special force to provide a standing patrol in all weathers.

The launching of HMS Jersey is the first step towards the deployment of the five new offshore patrol ships which the Navy expects to have at sea by the end of 1977. Supported by long-range RAF aircraft, they will operate as an integral part of the armed services, conducting deterrent patrols around our oil and gas installations along the lines of the police Panda car in cities. Response will be matched to need, and the full resources of the armed forces, including frigates, helicopters, the Royal Marines and bomb disposal experts, will be available to assist as required. Together with three similar ships operated in Scotland by the Department of Agriculture and Fisheries for Scotland, the five ships will also carry out a variety of other tasks, including fishery protection.

HMS Jersey is due to be completed and accepted into service later this year. At that stage HMS Jura, at present on loan to the Navy for offshore patrol duties, will be returned to full-time fishery duties with the Department of Agriculture and Fisheries, Scotland.

Having decided that the use of frigates would be uneconomical in this new role, the Navy chose for the first time to order special purpose-built vessels designed to commercial standards. Their design is based on HMS Jura, which has proved that it possesses the required ability to stay at sea in all weathers and for prolonged periods.

Paul E. Beaver.

A thousand members of Ark Royal's ship's company lined the deck and spelled out the message as the ship entered the Florida port of Fort Lauderdale to take part in the American bicentennial celebrations. Ark Royal had been operating in the Western Atlantic since February but has since returned to the UK (MoD).







## Sting in the tail — Maxim gun truck

Third instalment in this Boer War armoured train project from Terry Wise

THE MAXIM GUN truck was standard equipment for armoured trains in the Boer War from 1900 on and was usually equipped with two Maxims (one each side, towards one end of the truck), or a 1 pdr Nordenfeldt pom pom (at one end of the truck), or with all three. If a pom pom or Maxim was mounted at one end, to give maximum traverse, it was usually shielded off from the remainder of the truck and the area round the gun mounting was left open to permit maximum visibility and traverse. Such a truck would, of course, be used at the front of a train, or to bring up the rear; or there might be one at each end. The leading Maxim truck usually carried the commanding officer of the train and was linked to the other trucks by telephone. Armour was half inch steel plate along both sides and at one end.

Illustrations of such a truck appear in Blandford's *Railways and War before 1918* (plates 13 and 14) but I have chosen to model an earlier version, somewhere between the standard pattern Maxim truck and the makeshift truck shown in the photo of the armoured train 'Gentle Persuader.' Airfix Cattle Wagon and Brake Van kits are needed, mostly the left-overs from kits used in last month's article.

**Modelling** Follow kit instructions 1-9 for the Brake Van kit and add the coupling system required. Before cementing in place Part 2 remove the ribs on the upper surface at each end by cutting off these corners flush with the remainder of the sides, and trim the buffer plates accordingly. This provides the truck base and on to it are built left-over parts from the Cattle Wagon kit and also the vacuum brake pipes of the Brake Van.

The parts needed from the Cattle Wagon kit are 25, 27, 29, 30, 32 and 35. These are reduced to 17 mm high by removing the lugs at the bottom and the rails at the top of 27, 29, 32 and 35. Hinges and any locating lugs on the rear faces should also be

removed. Cement these parts to the outside of the Brake Van floor at each corner, after chamfering the corner edges to receive end panels — parts 25 and 30 also reduced to 17 mm high. Extra panels (parts 27 and 29) are taken from the left-overs of the second Cattle Wagon kit used last month and added along the sides. This leaves a gap of 11 mm and this is used to isolate the pom pom cabin, the two cabins thus formed being sealed off by using Parts 25 and 26 from the Brake Van, the tops cut off immediately above the doors. The windows in these panels should be filled with plastic card. The two cabins are then armoured by cementing along the sides two long and two short armoured plates, each with a single, long rifle slit. The panels are the usual 10 mm riveted card on 30 thou backing, with the rifle slit 4 mm deep and starting 3 mm down from the top edge. Measurements may vary slightly, but should be 55 mm long for the rifle cabin, 25 mm long for the pom pom cabin. Depth is 15 mm, which allows an overlap of 5 mm to be cemented to the inner face of the sides. A similar armoured plate, 25 x 15 mm, is cemented at the end of the rifle cabin. Machine-guns may be fitted at each side of

**Top of page** 'Gentle Persuader' armoured Maxim gun truck on the Natal Railway. **Below** Side view of the conversion. **Right** The 'sting in the tail' — end-on view of the Maxim gun truck conversion before painting.



the long cabin as wished, mounted on sprue or balsa pivot stands.

Triangular additions, 27 mm along the base and 7 mm to the apex, are now cemented above the four end panels of the cabins to support the roof. The outer triangles should be faced with planked card to correspond with the timber sides. Add a lamp, from the Brake Van, with its bracket cut off, to the triangle above the pom pom position. The roof itself is made of two 30 thou panels, each 98 x 15 mm, cemented to a rectangle of 20 thou 98 x 32 mm, the whole then gently bent to form the vee of the roof. Further reinforcement can be added by cementing 30 thou rectangles to the underside so that they clip within the walls of the cabins; this also helps to keep the roof in position. Of course, if you do not wish to place figures within the cabins, the roof may be cemented in position.

The Nordenfeldt was made from a 10 mm length of tube inserted into a shield of card, 8 mm wide by 12 mm high, leaving 6 mm of the tube protruding. The shield and the remainder of the tube were then mounted on a 16 mm length of squared sprue, cemented to the floor slightly away from the cabin's end wall. All wooden parts were painted matt khaki, metal parts, the bogies, floor beams, buffers, etc, in matt black.

It will be noted that the Maxim gun truck described above, and the searchlight car made last month, both have detachable roofs. Modelling an armoured train can be a very satisfying project in its own right, the model set on a piece of track, markings painted on the trucks, extra equipment and vegetation added etc, to produce a diorama, but I must confess that my personal preference has been to make a 'working' model, ie one that may be used in conjunction with 00/HO figures, in a word — wargaming.

Many wargamers may consider the role of railways too limited even on an 8 x 5 foot

Continued on page 24



## Big News from Revell! 1/35th scale military kits in real reference- book detail



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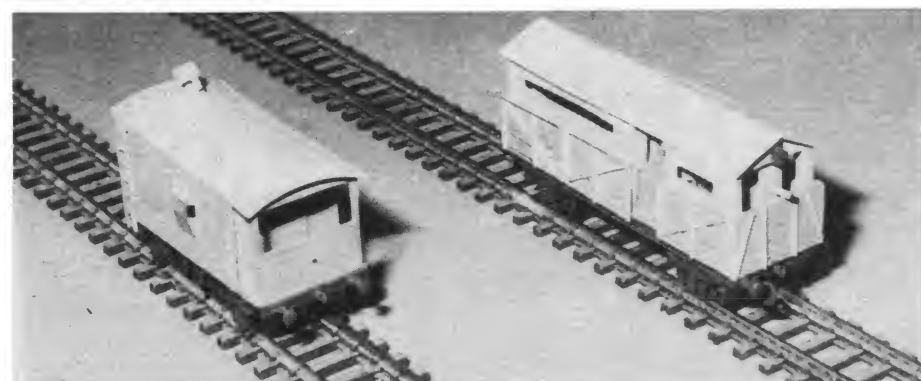
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Completed model of the Maxim truck. Alongside it is another view of the searchlight car modelled last month.

table. Certainly movement is restricted because a very few moves can take your model right off the table — and there is no point constructing a model that spends most of its time off the board. However, wargaming of the 'skirmish' variety can provide an interesting game with an armoured train as the centre piece, supported on the flanks by infantry and cavalry units. Therefore, as far as 20-25 mm scale wargaming is concerned, an armoured train is most likely to be used for the small, colonial wars, such as the Egyptian campaigns of the 1880s, or isolated actions of the reconnaissance and guerilla ambush type fought during the Boer War. In such settings they play a full part in the action.

Armoured trains in 1:300 scale naturally present an entirely different picture, and we are not concerned with them here. However, our editor has investigated their potential on the wargames table in his book *Tank Battles in Miniature 2: A wargamer's guide to the Russian Campaign 1941-1945*. Most of the ideas for rules listed in the armoured trains chapter are suitable for 25 mm scale, and I can do no better than refer readers, who wish to wargame with a 25 mm scale model armoured train, to this book.

Using an armoured train in mock warfare brings to the fore the question which occurs whenever armoured trains are mentioned: yes, they are very interesting, but did they have any real value? As we saw at the beginning of this series, the first armoured trains used in Egypt could usually be cancelled out by installing a large calibre gun to engage them whenever they ventured forth; but in this theatre there was very little track and the trains seldom moved more than a mile or two at the most, really being little more than mobile artillery.

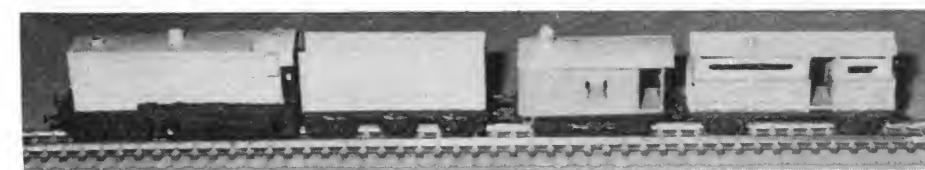
During the first year or eighteen months of the South African War, the armoured trains were successfully ambushed time after time by a handful of Boers, with considerable loss of life and rolling stock. (Captured drivers and firemen — who were civilians — were normally shot out of hand and the train set alight.) However, once quick-firing guns were mounted on railway

trucks and included in every train, with a Maxim gun truck at front and rear of that train, the armoured train became a highly effective weapon and was used to help parcel out the land when the Boers were being cornered by Kitchener's pill box system; patrolling the 'borders' of these parcels in support of the pill box network, and rushing up rather like the US cavalry of Hollywood to save the beleaguered garrisons in the nick of time — all this in addition to guarding the supply and troop trains and patrolling the tracks along the lines of communication to preserve the railway system itself.

The usual complaint against armoured trains is that they are extremely vulnerable to enemy action: firstly, because they can only advance along a predictable path and their evasive action is strictly limited by the tracks to which they are tied; secondly, because the removal of one piece of rail — or the mining of the same — could cancel out the entire train; and thirdly, because once halted they became a sitting target. In the South African War the Boers frequently mined the track both in front and behind the train and, having thus isolated it, bombarded it from a safe distance with guns brought up and sited especially for that purpose, until the train surrendered. The fitting of artillery to trains drastically reduced the number of such ambushes after the end of 1900.

On the credit side the early armoured trains were akin to the tanks of World War 1 and were really formidable with their plate armour, machine-guns, and quick firing artillery pieces. Later on, during the World Wars, the trains became even more vulnerable because of air and artillery attack, yet railways can be more quickly restored to full operational capacity than any other form of land transport, and in vast countries like the USSR, where there were comparatively few good roads (exactly as with South Africa in 1899-1902) they were to play an important role. Next month we will discuss the armoured train in the two World Wars and model two gun wagons for that period to provide an alternative train for those wargaming in these periods. □

Assembled model with locomotive and tender, searchlight car and Maxim gun truck.



IN MARCH 1812 the Foot Guards and the Infantry of the Line were ordered to take into use '... a new pattern regulation cap ...' to replace the ugly old 'stovepipe' shako which had served them so well during the earlier years of the Peninsular War.

Unlike the old cap, which had been worn only by the rank and file, the new pattern shako was to be worn by all ranks including officers of field rank when on campaign.

The new cap was made of coarse felt for the rank and file and of fine quality knapped beaver for the officers and the pattern was based on the high-fronted headdresses worn by the Austrian infantry, known as the 'kasket', the Portuguese shako known as the 'barretina' and a shako developed in Holland which was called the 'shako Belgic'.

There are several versions of the cap in the National Army Museum and specimens are in other military museums and regimental collections.

All these headdresses differed in a variety of minor details but on average were 6½ inches high at the back; 5¼ inches high at the sides of the cap; 8½ inches high at the front measured from the upper side of the 2¼-inch wide flat glazed peak or eye visor to the top of the false vertical front, and 7 inches across the flat top. The false front was curved at the top and firmly supported by a thick wire hoop at the back which was covered by a one inch wide black ribbed braid or a strip of thin glazed leather. Most of the officers' caps had a further strip of braid along the lower edge of the false front and in some cases along the bottom edge of the other part of the cap.

Some versions are shaped at the back, coming down to a definite point at the nape of the neck; some had a chin strap and others a small buckle on the bottom band to adjust the cap to the head. Some types are straight-sided while others appear to taper towards the top.

The shako was provided with a new pattern brass (fire-gilded for officers) baroque pattern front plate to replace the rectangular universal plate used on the old cylindrical shako. The new cap plate had an elegant design with a large Royal Crown at the top and a raised edge. The surface was sometimes polished smooth and sometimes grain finished and the universal pattern had the Royal 'GR III' Cypher raised in its centre. Some patterns had the regimental number beneath the cypher, others had Ancient Badges or other National Emblems such as the Rose or Thistle. Needless to say that patterns of cap plate exist which differ in many ways from the established pattern.

For the Light Companies of Regiments of the Line a bugle-horn was sometimes worn above or below the plate or even superimposed on it. In some regiments the plate was abandoned for a combination of a bugle horn over cut out regimental numbers.

Across the front of the shako a worsted chain-garland was looped. It was worn from the cockade on the left side looping under the cap plate to a hook high on the right with pendant tassels. Beneath the plate was a small hook which caught the garland and kept it in position. The garland was white for the centre or 'battalion' companies, also white for the grenadier company but usually green for the Light Infantry company. The cords of the officers were

# British Army uniforms

1660-1900

Infantry headdress 1812-1815 by Bryan Fosten

gold mixed with crimson silk. In some regiments even the Light Infantry wore white cords and in others the small hook under the plate was omitted, letting the garland swing loose. The cockade was made of black braid and was designed in a coil with a small regimental button in its centre. Officers and senior NCOs had black silk pleated cockades. Some regiments with the Sphinx traditional honours wore a small replica badge on the cockade.

Behind the cockade a small metal tube was let into the body of the cap. In this a woollen tuft was worn. This ornament, made by drawing out a 'bull-rush' shaped piece of wool, was white over red for the eight centre companies, all white for the grenadiers, and all green for the Light Infantry. Some drummers wore red over white and some all red.

The officers wore cut feather ornaments dyed the same colours as their men. Field Officers had larger all-white feathers.

Many of the caps examined by the writer had a curious addition at the rear. In most

cases this comprised a small rectangular piece of thin oiled or waxed cloth stitched on the inside edge of the back of the cap then brought up on the outside and folded over a short length of fine chain stretched between two hooks and allowed to fall. It was in fact called a 'fall' and in some cases comprised a stout piece of leather actually stitched to the lower edge of the outside of the back of the cap. Its use is thought to be as an extra protection against sabre cuts.

In foul weather and on campaign a glazed cover was worn. This slipped over the cap and had a wide piece which hung down to protect the neck and tied off under the chin but which could also be folded up and tied in front with the same tapes. Several contemporary paintings and prints show these, including the fine Dighton's just acquired by the National Army Museum. There are several references to the sun flashing off these glazed cap covers during the campaign.

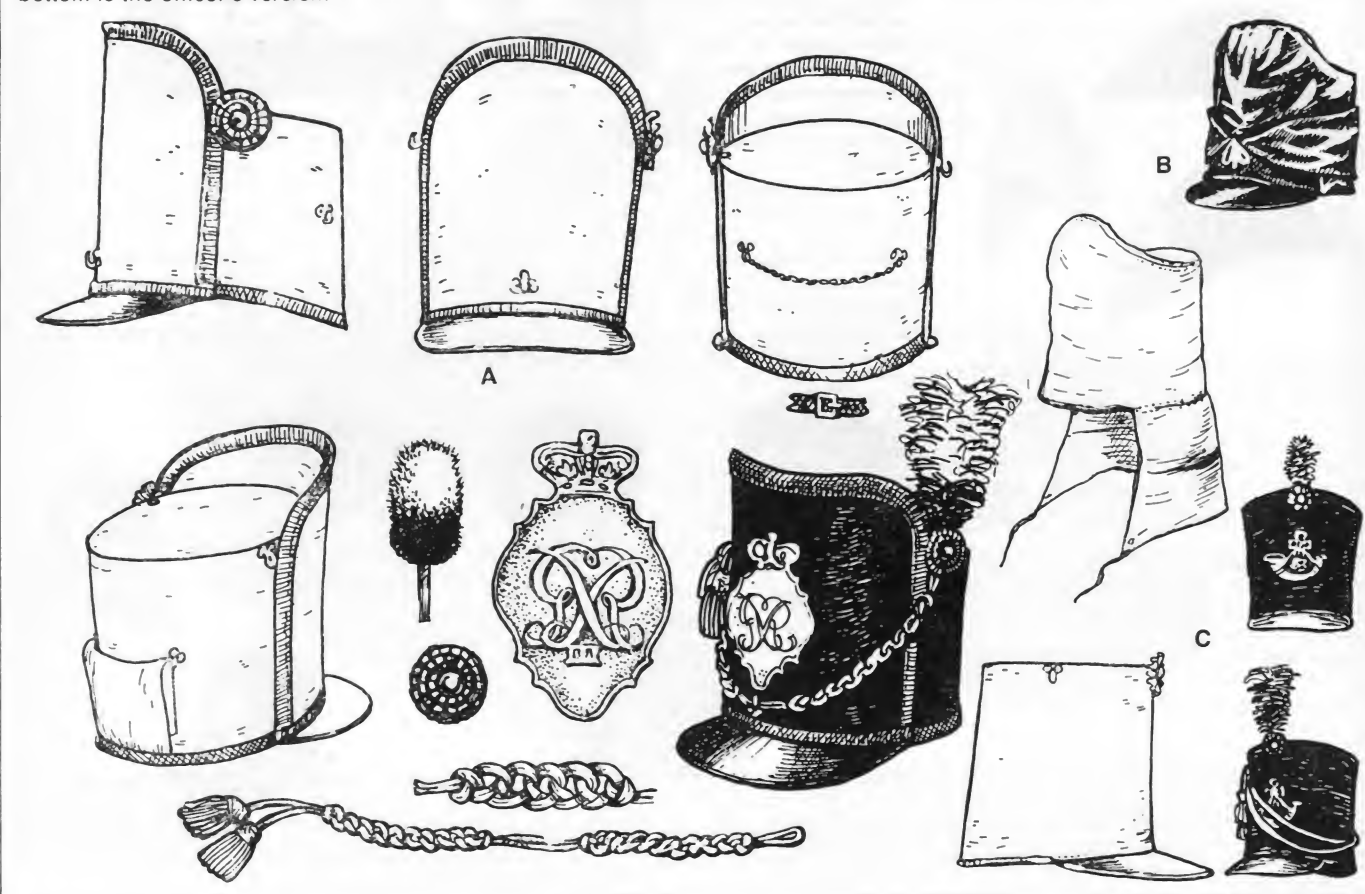
Shortly after Waterloo the design of this cap was criticised by several foreign obser-

vers at the great military parade held in Paris to commemorate Wellington and Blücher's victories. It was called an 'ugly little cap' and no doubt compared badly with the elaborate and extravagantly plumed shakos worn by the Austrian, Russian and Prussian Armies. As a result it was withdrawn from service by the next year and a bell-topped cap of 'European appearance' was brought in. Light Infantry regiments were not issued with the 1812 shako. Instead they continued to wear either the old stovepipe, or a modified version of it which tapered towards the top and is shown in much exaggerated fashion in the French cartoons. It was also called the 'sugar loaf' after the familiar shape in which confectionery was sold in those days. The cap is shown very clearly in Goddard and other prints of the day but the existing surviving patterns bear little resemblance to these representations. Certainly the version in the NAM is simply a normal cylindrical cap with a flat visor. It seems likely that the caps were often severely distorted by the elements and swiftly assumed the shape of the wearer's head. So, from the front they would appear almost wider at the top than the bottom, what C. C. P. Lawson liked to call *evase* and were tapered when viewed from the side.

The specimen measured by the writer was 7 inches high in front; 6 inches high at the back and had a flat glazed peak 2¼ inches wide. The top measured 7¼ inches across. Versions of this cap are shown with the 'fall' at the rear.

In a painting of the Battle of Waterloo by

A The 1812 pattern shako, showing the neck-cover; the small buckle for adjusting the bottom of the shako to head size; the tuft for other ranks; the shako plate and the plaited cords. To the right in the bottom row is the officer's version. B The oilskin cover. C The Light Infantry shako of the same period. Distortion caused when in wear made it appear *evase* when viewed from the front. At the bottom is the officer's version.



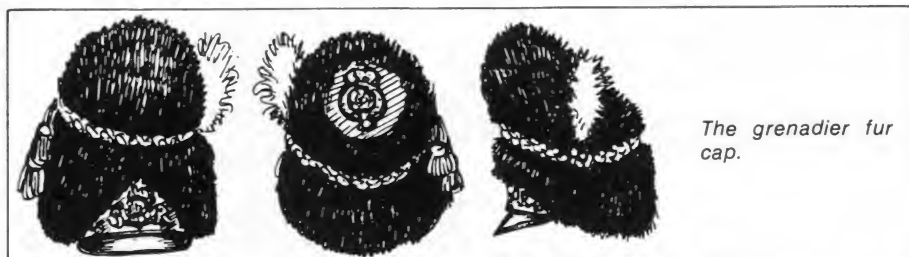


Jan Anthonie Langendijk, in the Royal Collection (Cat 255) are several figures wearing this cap with a large bugle horn on the front and a sunken top. They have the back fall and seemingly chin straps.

In some regiments green or black worsted chains or plaited cords were looped around the shakos once, twice or sometimes looped from high on one side to low on the other. It all seemed to have been a matter of personal choice by the Colonel. The Light Infantry wore a bugle-horn on the front of their shakos with the regimental number in the triangle formed by the cords and the bugle. The green tuft or cut feather was worn in front from a small socket behind the black corded cockade.

For undress the infantry wore a wide topped version of the blue Kilmarnock bonnet. It had a band in the regimental facing colour and a pompom or 'tourie' in the company colour, red for the centre companies, white for the grenadiers and green for the light infantry. Officers seem to have had gold or silver bands and top buttons. In some regiments Arabic or Roman numerals appear on the band either in metal or interwoven in white or yellow.

Although some Field Officers wore the shako others continued to wear the cocked hat. During the early period it had been an awkward and huge hat worn across the head. As so often happens in wartime it



The grenadier fur cap.

tubular socket supported a cut feather indicating the company. For the 42nd Regiment the centre of the cockade was decorated with the usual regimental button for the battalion companies; a grenade over a Sphinx for the grenadiers and the bugle-horn for the Light Infantry. For the drummers of the 42nd the Sphinx was worn over the numerals '42'. In this particular regiment the cockades also differed from company to company: black for the battalion companies, green edged with red for the Light Infantry and red for the grenadiers. Officers of the 42nd wore black silk cockades but the Captain and subalterns of the grenadier company wore just the grenade and the Sphinx but no cockade. The 42nd also wore red cut feathers and red but with white roots for the grenadiers and green with a red tip for the Light Infantry. Highland regiments wore the 'hummer' bonnets without the feathers for undress. The caps had 'touries' in the company colours, red, white and green. It is believed that in the 42nd all the 'touries' were red at this period. Officers probably had gold or silver buttons.

In full dress grenadier officers and grenadiers of the Foot Guards and Infantry of the Line and the officers and men of all companies of Fusilier Regiments wore black bearskin caps, although these expensive items of uniform were often in short supply or mostly lacking, in which case it is likely that only the officers, NCOs or special quarter guard details wore the cap. The caps of the fusiliers appear to have been smaller than those of the grenadiers. On the front was a gilded and black lacquered brass plate bearing the Royal Arms and the motto 'Nec Aspera Terrent'. Little is known of the exact size or pattern of these caps and we have to glean what information we can from prints and the few water colour and oil paintings which still exist. A white feather was worn on the left side of the cap and it had a chain

garland of white worsted cord looped around it. Officers, and NCOs in some regiments had gold cords. In the early 19th Century the red cloth patch over part of the bare carcass of the cap at the rear was still used but by 1815 this was gradually disappearing. The patch was probably decorated with some device, either a white embroidered flaming grenade or the number of the regiment although both these ornaments are sometimes shown on the cap actually below the red cloth part. The Fusiliers regiments are said to have had more elaborate devices indicating the Ancient badges of their regiments including the Garter and the Rose, the Thistle and Prince of Wales Feathers. Small black glazed leather eye visors were worn on the caps. These were so covered by black fur as to be almost unnoticeable.

The 71st Highland Light Infantry had an exciting career during the Peninsular Wars and had changed their status by the time of Waterloo. They no longer wore Highland dress but retained several Scottish characteristics, including bagpipers. Their head-dress was very distinctive, the officers wore the Light Infantry pattern cylindrical cap and had a green feather and silver strung bugle-horn badge. The rank and file wore a headdress which has been the subject of much conjecture among artist historians. C. C. P. Lawson and L. E. Buckell were of the opinion that it was the 'hummer' bonnet as worn by all Highland regiments but steamed and shrunk over a light infantry cap block so that it was 'cocked' to resemble a tapered Light Infantry cap. No feathers were worn. Captain Jones shows this headdress worn by the rank and file and by the piper. The cap had a black eye visor, a diced band and had the 'tourie' (green) on the top. Some authorities show a short green tuft worn in front but others do not show this decoration. It looks like a squat version of the Light Infantry shako but with the diced band and 'tourie'.

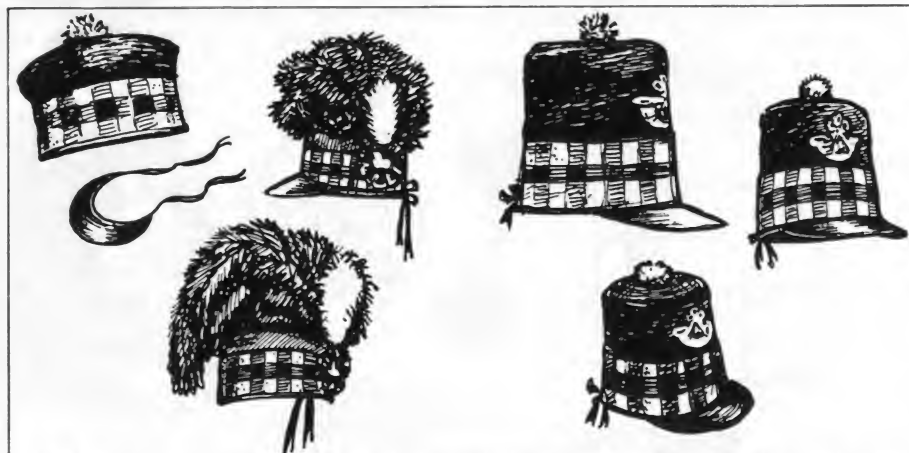


Above The undress fatigue cap. Below The 'chapeau bras' also showing the oilskin cover.



soon became a smaller and more utilitarian headdress worn front to back and was mostly covered with a glazed cover tied along the top edge. This was the small crescent-shaped hat called the 'chapeau bras' which could be folded flat and carried under the arm at Court, balls and in drawing rooms.

Highland regiments continued to wear the blue melton 'hummer' bonnet with its woven red, white and green lower band. On campaign a black glazed leather eye visor or peak was often worn. This detachable addition to the headdress was tied with tapes which hung down at the back of the cap. The bonnet was decorated with black ostrich feathers. Some regiments had the longer 'foxtail' feathers which hung over to the right side of the cap to hang pendant below the lower edge. Others used shorter feathers which only just covered the blue melton. On the left side the bonnets had large black cloth cockades behind which a



Left The 'hummer' bonnet of the Highland Regiments with its removable peak. The officer's version, below in the illustration, shows the longer feathers. Right The shako of the 71st Foot as it appears in contemporary prints.



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# NIGHT FIGHTERS



First instalment in a new modelling series from **Bryan Philpott**

MOST SERIOUS followers of the hobby of making plastic model aircraft usually develop their collections along a theme which can be as diverse as the history of fighter aircraft, or as simple as the development of one particular manufacturer's products. Quite often the idea of a suitable theme results from the individual's personal experience or interest in the subject chosen and often follows as a matter of course soon after the first tentative steps into model making have been taken.

It is not too difficult to analyse the options that present themselves after a little thought, and come down in favour of one that will hold the interest, as well as not precipitate too difficult a task in accumulating enough reference material to enable the chosen subject to be worked on.

The appearance of Bill Gunston's book *Night Fighters — A development and combat history* (to be published in October by Patrick Stephens Ltd) gives an ideal oppor-

tunity for the modeller who is looking for something a little different to find his theme and much of the reference material he will need in one handy volume.

The history and development of night fighters is a fascinating subject that can lead to a collection showing a wide variety of aircraft which in itself enables the model maker to diversify his interests whilst still staying within the bounds of his subject.

Until the perfection of airborne interception radar, night fighter pilots operated very much in the dark (pun intended!) and the whole business of intercepting enemy aircraft in a dark hostile sky, was very much a hit-and-miss affair.

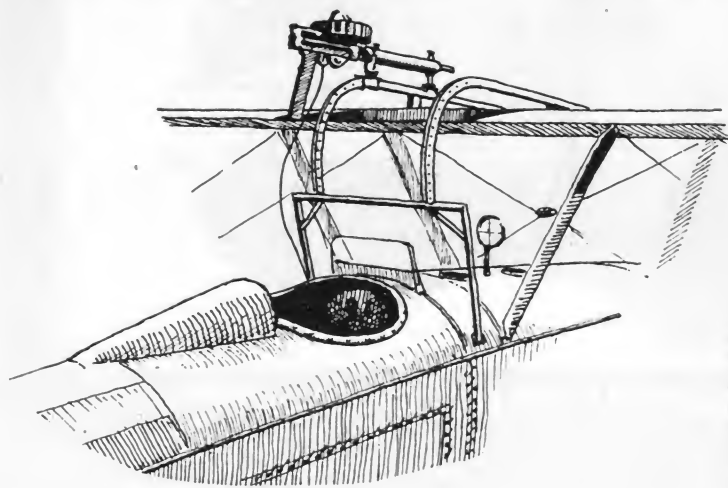
Long before the mysterious 'black boxes' metaphorically turned night into day, many experiments ranging from airborne searchlights which turned the darkness into a harsh white glow and hopefully illuminated the hostile aircraft, to parachute bombs carrying lengths of wire into which the hos-

tile force flew, were suggested and tried without startling results. Propaganda in which the consumption of carrots was alleged to improve night vision with lethal results, was also perpetuated, and believed, but basically the harsh facts cannot be disputed. A night fighter without radar, groping about in the darkness, was often as lethal to those who flew it as those whom it sought, and the chance of success depended a great deal on Lady Luck.

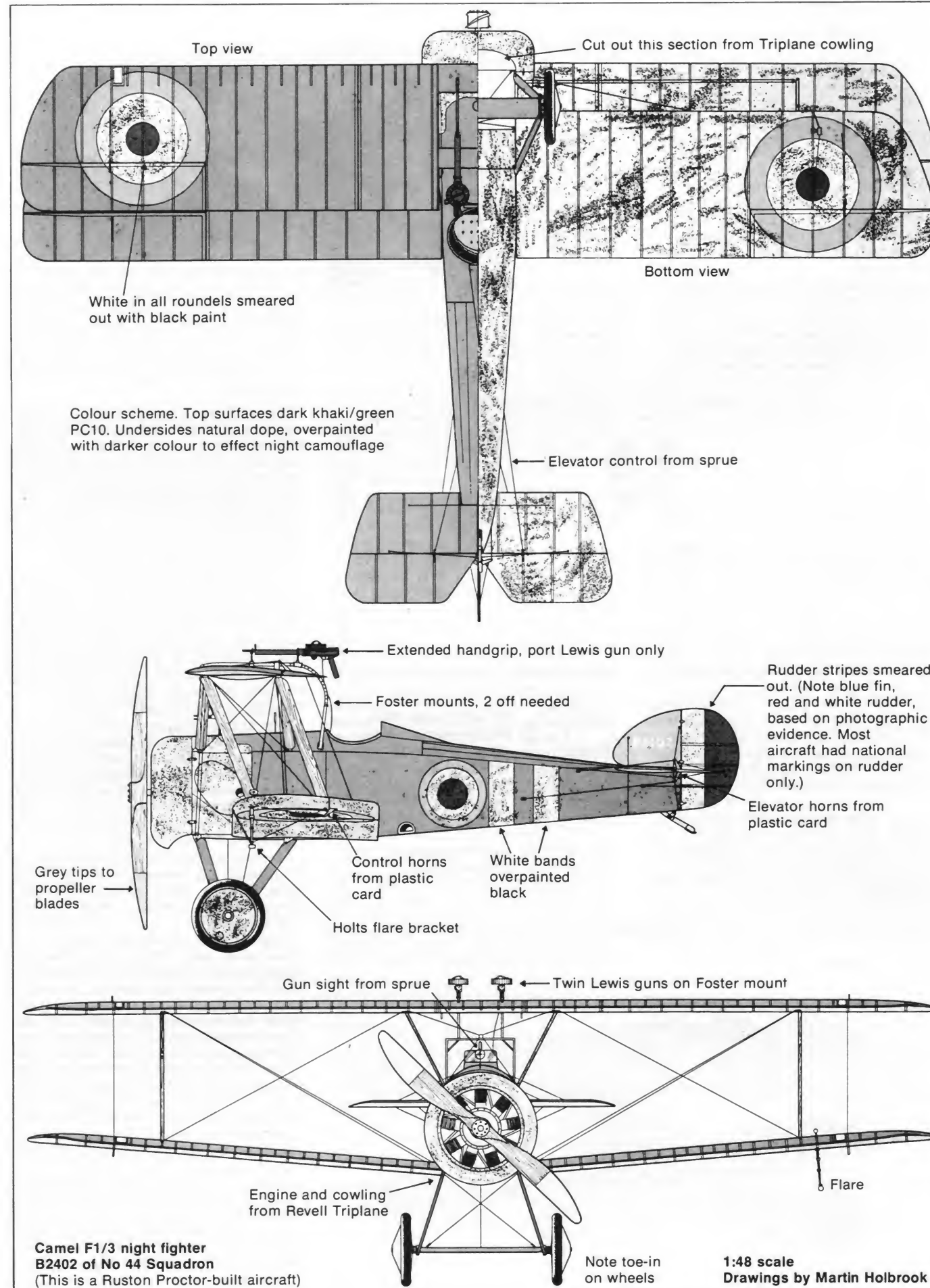
In the early days of aerial warfare even daylight interception, without the aid of early warning radar, was very difficult as is evidenced by the total lack of success by the 92 British fighters which set out to intercept 14 Gotha bombers which bombed London on the morning of June 13 1917.

At this time tentative steps had already been taken to press day fighters into nocturnal interceptors, and despite the prophets of gloom who claimed that to attempt to fly such aircraft as the Sopwith Camel in the dark, was asking for a one way ticket to the 'wide blue yonder', RFC pilots took their aircraft into the night sky and brought them back safely.

The night raids by Gothas of Kampfgeschwader 3, which began in September 1917, soon gave the RFC the opportunity of trying night fighting, and on the 3rd of the month Major Murlis-Green and Captain C. Brand of No 44 Squadron flew a 40-minute patrol in their Camels, which, although not successful as far as victories was concerned, proved that it was possible to take



Foster mount and support frame from sprue. NB Starboard gun omitted for clarity. Extended butt and Bowden cable ONLY on port gun.





off and successfully land again without the benefit of daylight.

Feverish activity by the squadron in fitting their Camels with instrument lighting, and the practising of night landings, brought a healthy enthusiasm for night fighting, and although several interceptions were made, it was not until January 25 1918 that the first success was recorded. This occurred when Captain G. Hackwill and Second Lieutenant C. Banks of No 44 Squadron successfully shot down a Gotha which crashed in flames near Wickford. From these early excursions a special night fighter version of the Camel evolved, and it is this aircraft that forms the basis of our first conversion.

The name 'Camel' is to the World War 1 enthusiast what 'Spitfire' is to devotees of World War 2, but by no stretch of the imagination can it be considered as aesthetically pleasing as its younger cousin.

The angular and pugnacious looking



**Above and foot of facing page** Two views of the author's model painted as in the drawings on page 29 and the front cover illustration.

fighter, or Scout to use the term of the period, followed the more graceful Pup and Triplane from the Sopwith stable, and despite its somewhat awkward characteristics soon became a popular mount of RFC Scout pilots.

The fuselage-mounted Vickers guns had their breech mechanism covered by a high decking which tended to accentuate the downward slope of the longerons behind the fuselage, thus giving the aircraft, which was officially the Sopwith Biplane F 1, the humped appearance which no doubt led to its appellation of Camel; a name that was never officially adopted but has become universally recognised and accepted.

The RNAS were first to receive the Camel in May 1917 and were in action with it on July 4 when No 4 Squadron attacked Gothas which had been bombing Harwich, claiming to have forced down and damaged at least four of the German bombers. The RFC were also equipped with the aircraft and by the time of the Armistice 22 squadrons had operated the aircraft.

Even at this early stage in the history of air fighting it became apparent that a successful day fighter did not necessarily make a successful night fighter, and early night interceptions soon brought to light problems that needed attention if the Camel was to have any chance of vindicating itself in the night fighter role.

Attempts to eliminate some of the problems resulted in the evolution of the F1/3 Home Defence night fighter which was, perhaps a little unkindly, known as the 'Comic'.

Parallel Foster mountings carrying two Lewis guns were fitted above the top planes, and the Vickers guns were removed from the forward top decking, although there are recorded cases of some night fighter Camels retaining at least one fuselage mounted Vickers. To enable the Foster mounting to be fitted the cockpit was moved aft in line with the trailing edge of the lower planes and a main tank from a BE 2c was installed inside the fuselage under the centre-section; behind this and immediately in front of the cockpit there was also fitted an auxiliary fuel tank. The cockpit was fitted with a headrest and the cut-out in the top planes considerably enlarged with the trailing portion often being removed altogether. Some aircraft also had the lower wing roots cut back from the rear spars. The usual power unit was the Le Rhône 110 bhp rotary engine.

The installation of the twin Lewis guns was also of interest as on some aircraft the



starboard weapon was mounted at an angle of 45° whilst the port one was in the normal horizontal plane. The port gun was also fitted with an extended pistol grip and a Bowden cable activated the firing mechanism. No 151 Squadron was equipped with night fighter Camels in June 1918 and went to France under the Command of Major Brand, who, as a captain, had been Major Murlis-Green's companion on 44 Squadron in the night action mentioned earlier. During their five month stay in France the squadron destroyed 26 enemy bombers without loss to themselves, although they did lose some pilots during non-operational crashes.

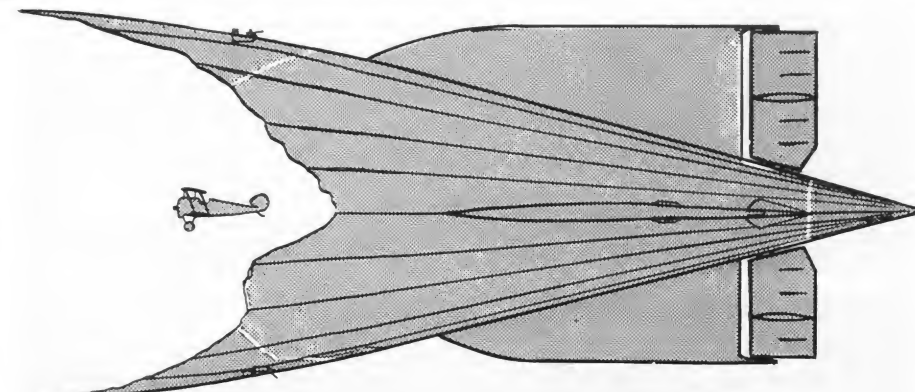
The Airfix kit of the Sopwith Camel is now very aged and requires a lot of work if it is to be a true representation of this famous fighter, and even more if it is to be converted to the night fighter version. But the work is not difficult and the end result more than justifies the time that is needed.

The task of producing the night fighter can be eased by the purchase of a Sopwith Pup and parts from the Revell Sopwith Triplane are also useful if the budget will extend to it; if not a lot of scratch-building is needed.

Start by making a vertical cut with a razor saw immediately behind the cockpit opening on parts 1 and 2, this cut extending down to the line of the top decking. Now make a horizontal cut forward following the line of the top decking to the nose. Whilst the two fuselage halves are still separate add internal detail with stretched sprue or plastic card strips, using the halves of the Pup fuselage as a guide, this work need only be carried out in the cockpit area, and while it is being done a strip of plastic card is used to fill the stand slot. Cement parts 1 and 2 together then fit a balsa block to the nose section where the plastic was removed. Once this block has set firmly it is carved and sanded to approximately its final shape, the final work being left until the cowling is in position as this helps to get a true line along the top fuselage.

The cowling, part 8, supplied with the kit is completely inaccurate and should be discarded and replaced by one from the Revell Triplane. The latter has a small slot at its base which must first be filled with body putty, then needs further revision by the addition of a cut-out on its underside. If you really can't afford a Triplane to obtain the cowling, it is necessary to either reshape the kit cowling to more rounded proportions, or build another one from balsa or by moulding plastic card, depending on the skill you feel you have, but there is no doubt that the Triplane cowling is the easiest answer and certainly improves the overall effect of the finished model.

Once the cowling has been made, the engine — again from the Pup, not strictly accurate but better than the integrally moulded kit engine — is installed and the assembly cemented to the semi-complete fuselage. Once all parts have set the fuselage is now completed by finishing off the shaping of the new nose decking, and inserting the new cockpit opening. To position this correctly hold the lower planes in position and mark the leading edge of the cockpit in line with the trailing edges of the lower planes, measure back from this line 8 mm and mark the rear edge of the cockpit.



Size comparison between a Camel and a German Zeppelin, one of the many illustrations from Bill Gunston's forthcoming book on night fighters.

Drill a hole in the centre of the marked area then enlarge this to the shape of the cockpit with a small round file making sure that it is symmetrical about the centreline. Detail on the kit fuselage is on the heavy side so it is best to sand this down, especially around the removable engine plates on the front cowling. The top decking longerons behind the cockpit were replaced on my model by thin strips of stretched sprue cemented in place with liquid cement. This is a delicate task but well worth carrying out as the final result really does look authentic.

Once the cockpit area has been completed a seat is scratch-built from 10 thou plastic card or cartridge paper and placed in position. It is also wise at this stage to insert a minute control column and instrument panel. It is virtually impossible to carry out this internal detail before the halves are joined unless you calculate their positions very accurately. Although it is a fiddly job to tackle these additions in reverse to that normally accepted it is, in my opinion, the best way of doing it.

The tailplanes and fin/rudder provided in the kit are inaccurate and should be discarded. New ones are made from 20 thou plastic card and the ribs on these are made from stretched sprue which is once again held in position by liquid cement.

Attention is now turned to the wings, and the first step is to sand the rather prominent ribbing to more acceptable proportions. If you feel so inclined it is worth sanding these right down and once again replacing them by strips of stretched sprue cemented in place. Should you decide to do this, leave it until the top centre-section

has been modified and the wing tip shapes corrected. The latter are clearly shown on the accompanying drawings and it is the work of but a few minutes to remove the excess plastic and arrive at a true Camel-shaped wing tip. The centre section cut-out on the top planes is a simple cutting exercise, but care is needed as the section at the rear becomes very delicate.

On some night fighter Camels the lower planes also had the cutouts adjacent to the fuselage increased to improve downward vision and this can be incorporated if you so wish. Before finally leaving the wings, it is a good idea to cut out the ailerons then re-cement them back in position as this gives a slight gap along the chord and a more positive hinge line.

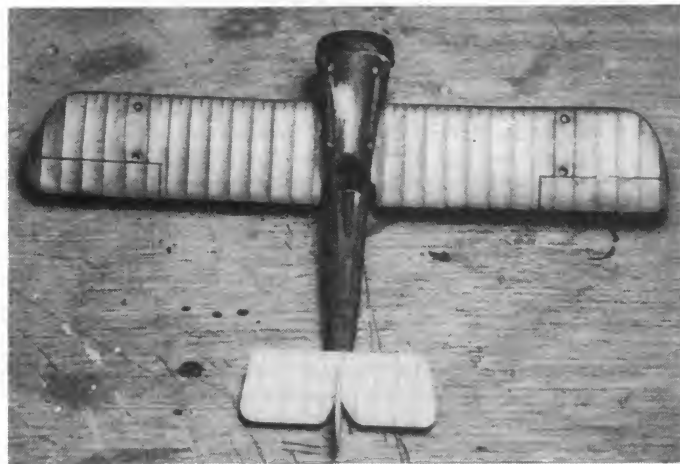
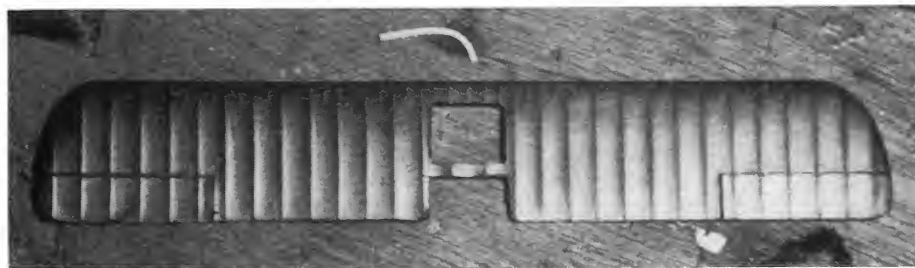
The fuselage should now be completed by a final sanding of the balsa block which is then filled with grain filler, and the addition of the headrest behind the cockpit. On my model I made the latter from the pointed end of a hardwood cocktail stick but a piece of sprue will do just as well. The lower planes are cemented in position followed by the new tailplanes and fin/rudder, all of which should be checked for proper alignment before the assembly is placed on one side to dry.

The undercarriage in the Airfix kit is a little too spindly and the huge bosses where the axle fits are grossly over scale. The legs from the Pup are much better and with a little modification can be adapted to fit the Camel. The wheels from the Pup are also used, and these together with the new undercarriage struts make the model look far more convincing.

At this stage it is best to paint the model







**Above** Top wings of Camel with modified cut-out and wingtips. Ailerons have been cut out and re-cemented into position. The small curved piece of plastic in front of the centre section is one of the Foster mounts for the Lewis guns. **Left** Top view of Camel showing new cowl, tailplanes and position of cockpit.

as it will be almost impossible to do this with any great success once the top wings are in position.

When the paint has dried the Pup interplane and cabane (fuselage) struts are cemented into the lower wing and fuselage locating holes, the latter have to be drilled in the new balsa nose decking as those on the original kit fuselage are removed during the early stages of the conversion.

I found that the Pup struts fitted perfectly although the cabane ones had to be reduced slightly in length. Cement the struts in place after removing any paint from the wings and fuselage, then leave them to set fairly firm, but do not allow the cement to reach its final firm state, as when the top wing is fitted slight adjustment, to get perfect alignment, will be needed. Once you are happy with the location of the wings, leave the model for at least 24 hours so that there is absolutely no doubt about its rigidity.

While the glue is setting attention can be turned to making the Camel's armament and its mounting. The Lewis gun included in the kit is discarded and a pair are made from stretched sprue with ammunition drums cut from plastic card. These weapons are very small and the work is tricky, but it is well worth carrying out unless a pair of better guns, say from the Handley Page 0/400, can be found in the spares box. The Foster mounts are made from 10 thou plastic card, the best method being to make one then use this as a pattern for the other, then hold them both together with double sided Sellotape or Cow Gum for final sanding to identical sizes.

The holes in these mounts must be included but even the finest drill will tend to split the plastic card, so the method I employed was to borrow a fine sewing needle from my wife's sewing box, place this in a pin vice then gently prick the holes through the plastic card.

The two mounts are cemented in place

on the centre section and the rear locating framework is made from stretched sprue and cemented to them and the fuselage, with liquid cement applied with a brush. The Lewis guns — the port one having the extended pistol grip cemented to it — are then fixed in position on their mounts with liquid cement and the model is almost ready for the final touches.

After painting the areas that were not covered in the interim painting stage, which will probably be only the top wing surfaces and the armament and its mounting, apply the roundels and fin flash from the kit but first remove the white surround to the roundels by careful cutting with a pair of sharp scissors. The fin flash will not fit too well on the new rudder but it is not hard to paint the blue/white/red stripes freehand or by using masking tape.

With all markings in place small control horns from 10 thou plastic card are cemented to the rudder, ailerons and tailplanes by using just a touch of PVA glue, these must be put on the model at this stage, otherwise they will be knocked off and location of the wing roundels over them is very hard.

The model is completed by adding rigging by whichever method you find best, be it nylon thread, fine wire or stretched sprue. On my model I used Uhu glue stretched with a cocktail stick for all rigging and control wires, as described in Airfix Magazine Guide No 2 Aircraft Modelling and my own forthcoming new book, *Making Model Aircraft* (to be published in September by Patrick Stephens Ltd).

Most night fighter Camels were finished in PC10 dark green overall, those that had the light coloured under surfaces had these painted over with either PC10 or what appears to be hastily applied black paint. The bright metal parts on the cowl, which, incidentally, on my model were metal foil, were also smeared over with a dark colour as were all the white areas in the national markings. □

# Hungarian armour during World War 2

The Turán tank and its derivatives described by J. C. M. Probst

DESPITE THE minimal interest hitherto bestowed upon the Hungarian Turán tank by AFV historians, this vehicle served as the main battle tank of Hungarian armoured divisions in the latter part of World War 2 and was used in quite considerable numbers. The Turán tanks and their assault howitzer derivation, the Zrínyi vehicles, bore the brunt of the fighting of Hungarian armoured formations in the fatal year 1944.

## Škoda licence

In 1939 Hungary looked for a medium tank suitable for licensing. In the Czech army's 1938 trials for a medium tank there had been two contenders, the CKD (Praga) V-8-H and the Škoda S-III. Since the V-8-H was selected by the Czech army as their ST-39 medium tank, the Škoda designers began working on another construction, the S-IIc, which they developed from their LT-35 light tank (Škoda S-IIa) for export applications. The S-IIc was offered to Hungary by Škoda, and the V-8-H was offered by CKD.

In 1940 the designation S-IIc was changed into Škoda T-21 and an improved and up-armoured version, the T-22, was made. The T-22 was shown to a Hungarian commission in Pilsen in May 1940, and it was demonstrated in Hungary during June and July. The V-8-H was also evaluated, but a licensing agreement was signed for the Škoda T-22 medium tank in August.

Before production, the Czech tank was modified on a number of points: a three-man turret was substituted for the original two-man version and a 260 HP V-8 engine designed by the Hungarian company Manfréd Weisz was installed. Armament was of Hungarian design as well. The new tank was dubbed Turán.

## The 40 mm 41M L/51 tank gun

A special tank-mounted version of the standard Hungarian 40 mm 40M towed

anti-tank gun (derived from the German Rheinmetall-Borsig 3.7 cm Pak 35/36, which was used by Hungarian troops as the 37 mm 36M anti-tank gun) was developed by MÁVÁG. In addition, in November 1940 a licence was obtained for the Škoda 40 mm Type A17 tank gun developed from the A7 gun used in LT-38 tanks. It appears that the tank mount of this gun was mated to the Hungarian 40 mm 40M gun and the result was the 40 mm 41M tank gun of the Turán tank.

This gun fired the same ammunition as the 40 mm 37M Bofors anti-aircraft gun, which was also made by MÁVÁG. 101 rounds of ammunition was carried by the Turán.

Machine-guns were the 8 mm 34/40M air-cooled belt-fed tank machine-gun derived from the Czech Brno ZB30 and made under licence by Danuvia.

The first prototype of the Turán tank was finished by August 1941 and production was started in October. The Hungarian service designation of the tank was 40M Turán I medium tank (közepes harckocsi), which in 1944 was changed into 40M Turán 40 medium tank.

The name Turán comes from Hungarian prehistoric legend, according to which the Turáns were an ancient Asian people, from which the Hungarian people originated.

## Turán I production

An initial order of 190, later raised to 230 tanks, was placed by the Hungarian government in October 1941, and 70 tanks were built at Manfréd Weisz of Csepel, 50 at Ganz of Budapest, 70 at MVG of Győr and 40 at MÁVÁG of Budapest. Engine production was distributed among Manfréd Weisz, MVG and MÁVÁG Budapest. Guns were produced at MÁVÁG Diósgyőr and likewise most other components for these vehicles were produced by Hungarian industry.



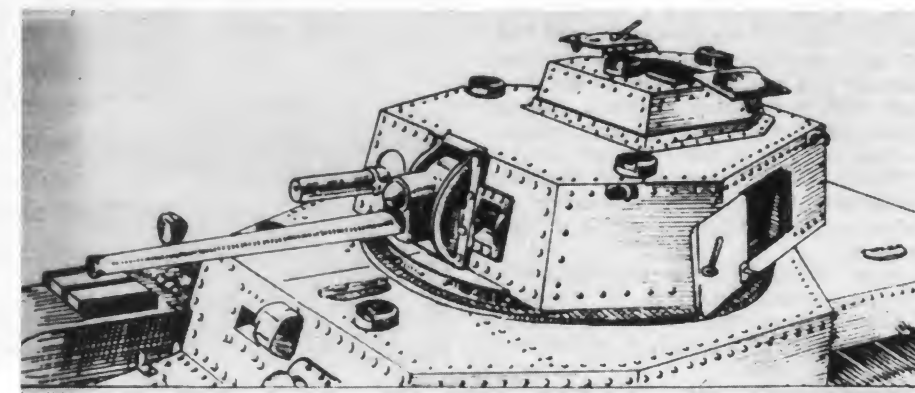
The initial order was followed by a new order in 1942 for 70 tanks, of which 24 were eventually built by Ganz, 12 by MVG and 19 by MÁVÁG Budapest.

With deliveries to the troops starting in the beginning of 1942, a grand total of 285 Turán I tanks had been produced when war events stopped production in 1944. Of these no less than 242 were delivered during 1942, and only 43 during 1943 and 1944.

Production of the Turán I tanks in 1942 was a major effort by Hungarian industry and the tanks were used to equip the 1st and 2nd Armoured Divisions and the 1st Cavalry Division in 1942-43. However, the disaster of the 2nd Hungarian Army on the Don in January 1943 (where no Turán tanks participated) suddenly made it clear to everybody that the Turán I was obsolete compared to Soviet tanks, and that a gun calibre of 75 mm was the minimum acceptable for a modern tank.

## The 75 mm 41M L/25 tank gun

Development of a version of the Turán with a short 75 mm gun had started in 1941. It was seen as a heavy support vehicle to supplement the medium Turán I main battle tank in armoured divisions.



The gun was developed by MÁVÁG from the Austro-Hungarian Böhler 76.5 mm 18M field gun, and as the 75 mm 41M tank gun it was produced by MÁVÁG Diósgyőr. The gun had some armour-piercing capability but could not stop a Soviet T-34 tank at any reasonable distance. 52 rounds of ammunition could be carried.

The Hungarian service designation of the Turán version with this gun was 41M Turán II heavy tank (nehéz harckocsi), which in 1944 was changed into 41M Turán 75 rövid (short) heavy tank. Even with its short gun the Turán II was suddenly the only usable tank available to Hungarian troops in 1943 and it still had to be produced in quantity.

An order for Turán II tanks had been placed in 1942 and the first three Turán II tanks were delivered to troops on May 13 and 15 1943.

## Turán II production

A total of 139 Turán II tanks were produced, mainly in 1943 and the begin-

**Above and left** Two views of Turán I armed with the 40 mm 41M L/51 gun. **Below** Drawing from a German handbook showing Turán I turret details.





Two views of Turán 1s.

ning of 1944, against a total order of 322, which should have been completed in 1945. Of these 54 were produced by Manfred Weisz of Csepel, 36 by Ganz of Budapest and 39 by MVG of Győr.

By the middle of August 1943 a total of 49 Turán II tanks had been delivered and in October another 66. They were allocated to the 2nd Armoured Division and the 1st Cavalry Division and 24 went to the new assault artillery battalions, which needed them as a stopgap until delivery of Zrínyi vehicles. Later the 1st Armoured Division received its share of Turán II tanks as well.

Since no better vehicles were available the Turán II tank became the main battle tank of Hungarian troops in 1943 and it bore the brunt of the fighting of Hungarian armoured troops in 1944.

### The 75 mm 43M L/43 tank gun

In April 1943 it was decided that a modern tank needed a 75 mm long anti-tank gun. MÁVÁG developed a special Hungarian version of the German 7.5 cm KwK 40 tank gun which fired both standard German and special Hungarian ammunition. This gun, which allegedly differed considerably from the German model, became the 75 mm 43M tank gun.

Plans were drawn up that all available Turán tanks should be modernised on the following points from the middle of 1944 onwards:

- retrofit with a 75 mm 43M tank gun
- additional armour fitted
- skirt plates fitted
- and work on a prototype vehicle was initiated.

In the winter 1943/44 the prototype was

sion and around the turret on some Turán I and II tanks in the second half of 1944. This gave the Turáns an appearance very closely resembling the late German PzKpfw III tanks with skirt plates.

### The Turáns in battle

Hungarian tank regiments of 1944 had an equal number of Turán I and Turán II tanks even if the Turán I was completely obsolete as a battle tank. Some of the Turán I tanks were equipped as command tanks. These tanks had a R/4T radio set instead of the left side ammunition boxes. They were called 40M Turán I pk medium tanks (pk = parancsnoki = command) and later 40M Turán 40 pk medium tanks. The command tanks were used by battalion and regimental commanders.

All Turán tanks, including the command models, had a R/5a radio set installed for communication to other tanks in the unit.

The Turán tanks were first committed to battle on April 17 1944, in Galicia, when the 2nd Armoured Division launched a counter-attack from Solotwina towards Kolomea. This was in a wooded and mountainous terrain with many streams, which were a particular problem because of snow melting at the time. So the terrain was a rather bad choice for a tank attack and the division was stopped in tank-to-tank fighting by small Soviet T-34 forces without reaching Kolomea. The attack was called off on April 26 1944. 30 Turán I and II tanks were lost. That was 26 per cent of the initial tank strength of the division.

From June to September 1944 the 1st Cavalry Division with a battalion of Turán I and II tanks fought in Eastern Poland and around Warsaw, and from September 1944 onwards both this division and the 1st and 2nd Armoured Divisions were engaged in heavy fighting in Hungary proper.

Only very few German tanks were given to Hungarian units in 1944, and since the inferiority of the Turáns compared with Russian tanks was well realised by Hungarian commanders, the Hungarian armoured formations were committed to battle somewhat reluctantly in the latter part of 1944.

### Assault artillery

Following the disaster of the 2nd Hungarian Army on the Don in January 1943, and impressed by German successes with assault guns on the Eastern Front, the Hungarians decided in April 1943 to build assault artillery vehicles and gave that task very high priority.

Two versions were planned to equip the

Turán 2.



assault artillery battalions of the new assault artillery troops, Zrínyi I with a long 75 mm anti-tank gun and Zrínyi II with a 105 mm howitzer. A total of eight assault artillery battalions were planned, each with 30 vehicles to be used as independent Army or Corps troops for the support of infantry divisions.

### The 105 mm 40/43M L/20.5 howitzer

By December 1942 the Manfred Weisz company had already finished a prototype Zrínyi II with a 105 mm 40/43M howitzer made by MÁVÁG Diósgyőr. This howitzer was a modified version of the MÁVÁG-developed 105 mm 40M towed field howitzer, 236 of which were built during the war. The maximum range of this weapon was 10.4 km.

The Zrínyi II used the chassis of the Turán tank, which had been made 45 cm broader to make room for the weapon. The engine was identical to the Turán engine. The Zrínyi II prototype was taken to the artillery training area at Hajmáskér in Western Hungary and tested between December 12 1942 and January 28 1943. As a consequence the vehicle was accepted for production and its service designation became 43M Zrínyi II assault howitzer (rohamtarack), later to be changed to 43M Zrínyi 105 assault howitzer.

The Zrínyi I used the same chassis and engine, but mounted the MÁVÁG Diósgyőr-developed 75 mm 43M L/43 anti-



A pair of Zrínyi IIs.

### Data: Vehicles

	40M Turán I	43M Zrínyi II	Tas tank	Tas tank destroyer
Main armament	40 mm 41M 101 rounds	105 mm 40/43M 52 rounds	7.5 cm KwK 42	8.8 cm KwK 36
Machine-guns	2 x 8 mm 34/40M 3,000 rounds	—	2 x Gebauer	—
Crew	5	4	5	4-5
Length	5.5 m	5.45 m excluding howitzer	6.9 m excluding, 9.2 m including gun	6.9 m excluding, 9.5 m including gun
Width	2.44 m	2.89 m	3.5 m	3.9 m
Height	2.3 m	1.9 m	3 m	2.3 m
Weight (battle)	18.2 tons	21.5 tons	38 tons	36 tons
Armour type	Bolted	Bolted	Welded	Welded
Armour hull nose	50 mm (61 mm)	75 mm	129 mm-20 mm	120 mm-20 mm
hull side	25 mm	25 mm		
hull roof	13 mm	13 mm		
Armour turret mantlet	50 mm	—	2 x Z-Turán V8	2 x Z-Turán V8
turret side	25 mm	—		
Engine type	1 x Z-Turán V8 gasoline, water-cooled, 15 litre	1 x Z-Turán V8 gasoline, water-cooled, 15 litre	2 x 260 HP	2 x 260 HP
Power	1 x 260 HP/2,200 rpm	1 x 260 HP/2,200 rpm	45 km/h	45 km/h
Speed (road)	47.2 km/h	43 km/h		
Range (road)	165 km	220 km		
Ground clearance	38 cm	38 cm		
Trench crossing	2.2 m	2.2 m		
<b>Data: Guns</b>	<b>40 mm 41M</b>	<b>75 mm 41M</b>	<b>75 mm 43M</b>	<b>105 mm 40/43M</b>
Length (total)	2.05 m	1.8 m	3.2 m	2.15 m
Calibre length	L/51	L/25	L/43	L/20.5
Elevation	—10°, +25°	—10°, +30°	—6°, +20°	—8°, +25°
Muzzle velocity	812 m/sec	400 m/sec	770 m/s AP	448 m/sec
			550 m/sec HE	
Ammunition	AP grenade 36M HE grenade 36M 'Kerngranate' 42M	AP grenade 41M HE grenade 41M	AP grenade 41M HE grenade 41M	AP grenade 40M HE grenade 40M
Armour penetration:				
100 m	46 mm (60°)		85 mm (60°)	
300 m	42 mm (60°)		80 mm (60°)	
600 m	36 mm (60°)		76 mm (60°)	
1,000 m	30 mm (60°)		66 mm (60°)	
1,500 m			57 mm (60°)	
2,000 m			50 mm (60°)	



tank gun of the Turán III tank. Development was initiated in May 1943, but a prototype was not completed until the winter of 1943/44, and production was planned to start in June 1944 at Manfréd Weisz and Ganz. Service designation of the vehicle was 44M Zrínyi I assault gun (rohamágyú).

The name Zrínyi comes from Nikolaus Graf Zrínyi, a Hungarian hero, who fought the Turks and was killed in the battle of Szigetvár 1566.

### Zrínyi II production

As a consequence of the decision of April 1943, a contract was immediately placed at Manfréd Weisz for 40 Zrínyi II vehicles. The number was later raised to 104 vehicles to be built by Manfréd Weisz and Ganz (54 in 1943 and 50 in 1944).

To save time, training of the first assault artillery troops was started in July 1943 at Hajmáskér using 10 Turán II and 10 Toldi IIA tanks, but in August 1943 the first five Zrínyi II vehicles were delivered to the troops (1st Assault Artillery Battalion).

A total of 60 Zrínyi II vehicles were completed by Manfréd Weisz when production stopped in July 1944 and it is possible, but not confirmed, that Ganz completed a further six in August and September 1944. These vehicles were used to equip the 1st and 10th Assault Artillery Battalions, whereas other Hungarian assault artillery battalions were equipped with German Sturmkanone 40 (StuG III) and Hetzer vehicles.

Production of the Zrínyi I was never initiated, and the single prototype was used for trials only. In November 1944 it underwent trials with six 152 mm rocket launchers mounted at Hajmáskér.

### The Zrínyi in battle

The Zrínyi II went to war with the 1st Assault Artillery Battalion in April 1944 in Galicia, and its first recorded use was July 14 1944, at Ottynia, Eastern Galicia. The vehicles fared well during the subsequent

fighting, but they lacked a real anti-tank capability.

In September 1944 the Zrínyi vehicles of the 10th Assault Artillery Battalion took part in the battle of Torda at Hungary's southern border, and later Zrínyi vehicles saw action at various places in Hungary proper. Zrínyi can be considered the most successful Hungarian AFV of World War 2.

Zrínyi vehicles were fitted with radio (probably R/5a type) and in the latter part of 1944 most vehicles were fitted with German-type skirt plates. 52 rounds of ammunition were carried.

The war production plan for 1944-45 had called for 240 Zrínyi vehicles.

### The Tas tank and tank destroyer

As a successor to the Turán and Zrínyi series it was decided in the spring of 1943 to develop a new modern heavy tank and a tank destroyer on the same chassis. These vehicles were named the Tas tank and tank destroyer after a Hungarian chieftain of the 9th Century. Development of the vehicles should be completed in 1945.

The development of both vehicles were entrusted to the Manfréd Weisz company, which built a mild steel prototype of the tank and had started to build the tank destroyer prototype, when the war prevented further work. The tank prototype was totally destroyed in an American bombing attack on July 27 1944.

The Tas chassis had six road wheels on semi-elliptical springs, a drive wheel at front and idler at rear. It used twin 260 HP Turán engines each with a dry coupling. The road wheels were suspended in pairs.

As armament for the Tas tank the 7.5 cm KwK 42 L/70 of the German Panther tank was foreseen and negotiations were initiated with Germany for the purchase of this gun complete with mount. For the Tas tank destroyer, which was similar in layout to the German Jagdpanther, the German 8.8 cm KwK 36 L/56 gun of the Tiger I was planned. □



THROUGHOUT THE summer of 1940 Army Co-operation Command was preoccupied with its role against a Wehrmacht landing in Britain. Patrolling Lysanders scanned our beaches from Scotland to the south of Britain. Although so concerned with its reaction to a German landing, the General Staff nevertheless found time to consider the offensive action which would have to come if ever mainland Europe was to be liberated.

A parachute troop force was decided upon, for the effectiveness of such had been demonstrated in Holland. Against landings by Ju 52s and DFS gliders many fields, parks, recreation grounds, indeed any sizeable open space in the east and south of the country, became festooned with poles, pipes, girders, huge metal loops — in short anything to deny the airborne invaders a space upon which to land. Meanwhile the General Staff and the War Office, in fairly close co-operation with Air Ministry, looked to a combined glider and paratroop force for some years hence.

Attention initially focused on the eight-seater glider which became the Hotspur. Such a small load would have necessitated a giant glider force which could never have assembled in a compact enough area to have enable a bridgehead to be established with any speed. In retrospect it is very clear that the concepts behind the glider force were poorly conceived, indeed they were soon confused when an attempt to deliver paratroops from gliders was inflicted upon the manufacturers.

In any case attention soon was directed towards a larger, 25-seater glider, backed by an even bigger machine to deliver heavy loads, including a tank. As an insurance against failure of the 25-seater a further specification was drawn up for a 15-seat glider which fitted no particular role.

The 25-seater glider was specified under X26/40. Construction would be of wood, and it should be possible to tow the machine using a Whitley, a bomber type to be phased out from its primary role quite soon. The tug-glider combination had to be able to clear 50 feet at the end of a 1,000 yard run. Probable action radius would need to be up to 600 miles, in retrospect a highly improbable feature.



Airborne troops emplaning in DP288. Note the yellow surround to the Type C underwing roundel (IWM).



Michael J. F. Bowyer



### Part 12 — Enter the Horsa

On October 12 1940 the Army Council approved the basic specification and agreed with plans to produce the 25-seater, the specification for which had been finalised the previous day and was already on its way to parties likely to be interested. These were relatively few in number where the aircraft industry was concerned, for the design teams needed to be experienced with wooden aircraft. De Havilland were already committed to the Oxford and Mosquito, General Aircraft had the Hotspur on their hands and Slingsby, with sailplane experience, was adjudged too small to undertake this huge task. This left only Airspeed to undertake the job. Their proposal, drawn up at Salisbury Hall where the design staff were sited, was accepted in December 1940.

Airspeed worked creditably fast, and on January 15 1941 the mock-up conference

Preparing Horsa DP288 for towing at Brize Norton. A tractor has positioned the glider and bifurcated tow ropes are being attached to it (IWM).



was held. Already the basic outline of an 88-foot span elegant glider had been decided upon, and details needed to be discussed. A jettisonable nosewheel undercarriage would be fitted and possibly a belly landing skid. Each man would, ideally, have a window by his seat both to boost his morale and to give a view of the landing zone. Spring-loaded doors would be added to container bays in the wings and, maybe, a rear gunner could be positioned to discourage fighter attack.

Construction of the first two prototypes, DG597 and DG603, took place largely at Salisbury Hall. Complex planning for the Horsa production programme was meanwhile commenced. Also, as early as February 1941, some thought was directed to eventual use of gliders in India. If this came about what type could tow them? Possibly the DC-2 available in small numbers, or even the slow, aged Valentia whose rate of climb as a tug was assessed as only 100 feet per minute and cruising speed 80 mph at 5,000 feet. The DC-2

would have been a much better proposition although its radius of action was only 360 miles in an area where range was ever paramount.

By June 1941 the size of the proposed airborne force was set at two Brigade Groups needing 800 25-seaters. A few weeks later the Director General of Aircraft Production fully explored possible production ideas, for the glider, now named Horsa, with Harris Lebus the furniture makers. An initial order would be for 400 Horsas, the first to leave the works in March 1942, nine in April with production building up to 40 in July 1942 and reaching a peak of 50 before ending in February 1943. Lebus had no airfield from which the gliders could be tested and delivered, so it was decided that they would be transported in parts to RAF maintenance units to be erected there and tested. Airspeed at Christchurch would also establish a production line, but their main preoccupation would be with development and not production. Five prototypes — DG609, DK346, DK349, DK353 and DK358, of which no photographs seem to have survived — would be built there for performance and loading trials.

The prototype AS 51 was completed in August 1941 and taken in sections to the Great West Road Aerodrome, sited where Heathrow now stands, for flight trials. On September 12 1941 with George Errington at the controls and being towed by a Whitley, the large glider was taken aloft for the first time.

Behind the scenes there had now been extensive production planning, mainly at Portsmouth, where it had been shown that a vast number of drawings would be needed for furniture firms not necessarily skilled in working to fine tolerances.

Some contract jockeying had taken place, for the original intention had resolved itself into an order for 600 Horsas, 400 man-carrying and 200 to carry bombs as listed in Specification X3/41. This latter type, the AS 52, would take 4 × 2,000 lb or 2 × 4,000 lb bombs in a huge central fuselage bomb bay, the intention being that these gliders would be towed behind bombers to increase the bomb load of the combination. The idea was dropped because new bombers looked likely to carry heavy loads anyway, and because of the tactical problems involved.

A run of 400 Horsas was, however, considered insufficient to warrant large scale production from a variety of sources, so the

Another shot of a Zrínyi II.







HS103 '31' of HGCU being prepared for night flying. This Horsa joined HGCU August 28 1942 and returned to Airspeed in January 1943. It returned to HGCU the following July after which its history is unknown (IWM).

order was doubled and set at 800 as mentioned previously.

On August 20 1941 contract action was taken for 400 Horsas backed by 400 eight-seaters and 14 of the 15-seater Slingsby reserve design.

By then an obvious problem had aroused concern. What was to be done with so many gliders when they were completed? Left in the open their wooden structures would be at the mercy of the elements, but there was insufficient space to store them erected and in hangars. For the moment they would have to be spread around 16 to 20 Aircraft Servicing Units. It was suggested that they might be stored shorn of their wings. No large scale operations seemed feasible prior to about March 1943.

A discussion on August 15 1941 decided that the home requirement would be for a minimum of 600 Horsas with a further 400 needed in India. How Horsas could be shipped there in quantity none could tell.

Glider pilots could not suddenly be placed in control of such a large machine with attendant landing problems without training, so it was decided in November 1941 that 50 Horsas should be specially completed for flying training. This raised the question of the paintwork on the aircraft. It had been agreed on March 15 1941 that the upper surfaces of all Horsas would be Dark Green and Dark Earth, although a suggestion was mooted for special upper surface markings to ease assembly on landing zones. Under surfaces would be in

accord with the theatre of operations in which they would be used. Ultimately all operational Horsas had black under surfaces since operation was deemed most likely at night. It was suggested that up to 100 Horsas be yellow on their under surfaces for training use, but this soon changed to yellow with black stripes to draw attention to them for safety's sake. Eventually about 130 seem to have carried such markings. Provisionally a further 50 were to have Sky under surfaces, the 150 prescribed having blue-red-white-yellow underwing roundels with the customary Type B/C1 elsewhere. Experimental and training gliders would have similar marking styles, but in fact some of the prototypes had all-yellow under surfaces and some were striped. Some had their upper wing tips yellow, but there was never any standardisation. If they were to be used as trainers Horsas should have underwing serials and these were certainly carried, but briefly, by some early production aircraft to at least DP307 and in Dull Red to stand out against the black striping.

Flight trials continued during the latter months of 1941, by which time it was envisaged that 800 would be needed in India although any delivery there was now unlikely before December 1942. Since firm orders had been confirmed so far for only prototypes it now appeared that full scale production could not begin before July 1942.

The intention during the design period was that Horsas would be used as paratroop transports with landing very much a secondary role, hence early discussion over the need for jettisonable undercarriage and skid. Troops would be supplied by Elliott containers dropped from gliders which would then be towed home.

**Key to drawings** David Dean has based his Horsa drawings on Airspeed Drg No 601011 showing the camouflage scheme for the Horsa trainer. In fact the drawing is more applicable to a cross between a prototype and a trainer since it has the striped under surfaces and the yellow upper wing tips apparently only used on prototypes. The diagram indicates black for the fuselage serials but Dull Red seems have been more common. Since Horsas were assembled from available parts, the wing to fuselage fairing had to be sprayed after assembly. Such production from components also led to quite a number of Horsa trainers partly bearing operational camouflage colours.

Container drops did not prove successful and this partly led to a decision to look more into the idea of landing gliders in hostile territory.

The opening of the Far East war again raised the question of Horsas in India. Taking the gliders there was an insuperable problem and then it was considered whether furniture factories in India and the waggon works of Indian Railways might build them. The ideas became stillborn, gliders used in that theatre might be available later from the USA.

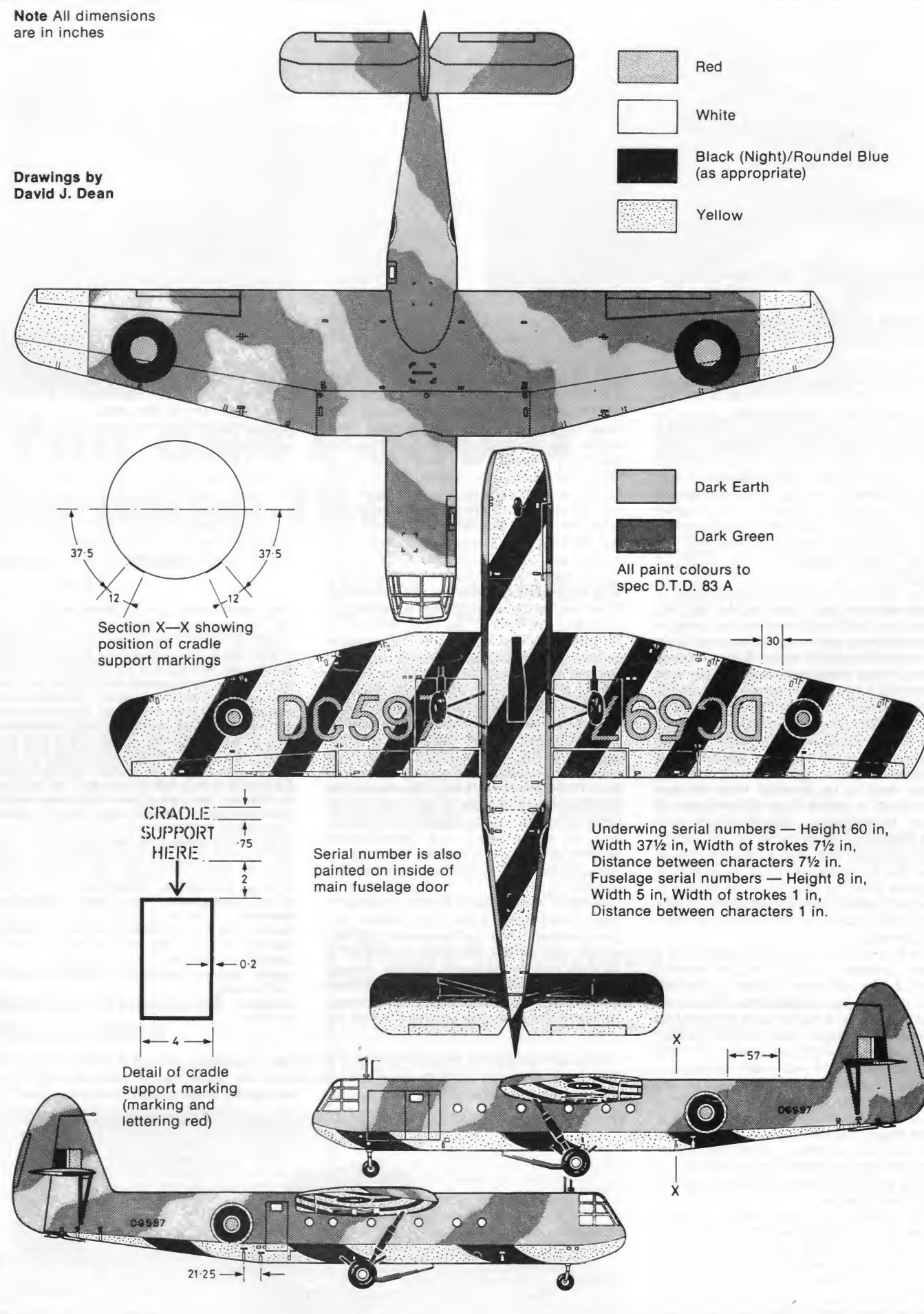
By early 1942 the Horsa was in production. Attention then switched to the choice of tug aircraft for the large glider force envisaged. Insufficient Whitleys would be available and in any case the type was almost obsolete. Therefore it was decided that from August 1942 production Armstrong-Whitworth Albemarle would leave the lines converted for glider towing, there being no need for this type as bomber or general reconnaissance type. All of the RAF's new four-engined bombers could tow the Horsa, but their numbers were insufficient as yet to allow any to be diverted. Alternatively the Avro Manchester could be used, but its engine problems put an end to such notions. The forthcoming Vickers-

**Top left** DP747 '10' of HGCU joined that unit July 29 1942 and remained with it until May 1944 when it became 4789M and was passed to No 5 GTS for ground training. It was struck off charge on November 20 1945 (IWM). **Left** DP383 was probably delivered to HGCU in training markings. Subsequently the yellow was overpainted black and the underwing roundel retained. The nose number 46 appears to be Dull Red like the serial. This machine joined HGCU September 14 1942 and remained in use there until July 18 1944 after which it went into storage at Netheravon from where it was sold on August 23 1946 (IWM).



**Note** All dimensions are in inches

**Drawings by**  
David J. Dean







**Above left** A close-up of the nose of DP288 shows crude paintwork and identity number in Dull Red placed on the fuselage side and on the front of the nose (IWM). **Above right** Yellow and black underwing striping is clearly evident here on a Brize Norton-based Horsa (IWM).

Armstrong Warwick, too, was in trouble. For the moment it would have to be the Whitley and then the Albemarle.

Horsa production was slow, and soon a bottleneck arose over fuselages. Then came the problem of disguising completed gliders from enemy reconnaissance aircraft. They might be placed in blast-proof shelters or sloping dugouts, and covered with netting. Even so they would provide ideal incendiary targets, something the enemy never seemed to realise or to explore.

The need for a very large number of Horsas was only too clear by March 1942. Indeed, by mid-May the order had risen to 2,345. Of these the Army wanted 1,975 for its first big operation and 600 for a repeat. For two large scale operations it was estimated that 3,500 gliders were necessary, so the production run was greatly extended to ensure continuity of production. Such large forces would demand a great number of tugs, indeed the reality of the need was that a whole year's production of bombers would need to be diverted from Bomber Command, a quite impossible state of affairs. Nevertheless many bombers were now fitted with some glider towing equipment although they never saw service as tugs. The Army had to revise its demands, dispense with the idea of using gliders to transport paratroops and settle for an estimated 880 gliders for the first major landing operation.

The first production Horsas came from a rather unlikely source, Austin Motors, which firm contributed widely to the aircraft production programme. Their first three Horsas were delivered to Airspeed for assembly and flight trials, DP714 coming on to active strength on March 31 1942. The second, DP715, was ready on April 15 and the third, DP716, on April 23. The first Horsas from Harris Lebus left the works at the end of March and were erected at Airspeed beginning with DP279 ready on April 22 and DP281 on May 6. Soon the gliders were also being assembled at Nos 15 and 27 MUs whilst others were stored instead of being put together.

The question of tugs was still being sorted out. In December 1941 a Whitley V had arrived at AFEE. During January the second prototype Horsa reached Snaith for trials using a Wellington III as a tug. After their completion in May attempts were made to see whether a Mk 1c could be used

for towing but there were problems. During the same month Lancasters L7529 and R5606 were also used for towing, but insufficient Lancaster production prevented the type being used operationally. Desultory attempts were later made using Wellington III X3286 for towing, but the Wellington was unsuitable. It was claimed that its geodetic construction might be stretched in the process. On June 29 1942 the Whitley V was released as the initial Horsa tug.

The Heavy Glider Conversion Unit, the first organisation to fly Horsas, formed at Brize Norton on July 16 from a nucleus of SHQ and the staff of the now defunct No 2(P)AFU. The first Whitley GT Vs moved in (BD557, BD558, BD559) followed quickly by Horsas DP279, DP281, DP314, DP291, DP715 and DP716 in that order. Between July and September the unit worked up to its strength which had been set at 16 IE + 14 IR gliders. No 296 Squadron at Hurn would be the first operational unit to receive them, and was scheduled to have 30 IE + 10 IR. A training unit at Shrewton also received a few Horsas in July, eg DP314, DP714. Initially there was some confusion over the title of the unit at Brize Norton which was variously known as the HGCU or Heavy Glider OTU until the former title was decided upon.

HGCU's Horsas were at first finished in Dark Green/Dark Earth with yellow and black striped under surfaces with Dull Red serials, like DP307 recorded on August 1. Whitley tugs had standard bomber camouflage. During ensuing months there were variations in the unit's glider markings. Horsa HS105 recorded October 24 had, for

instance, black underwing serials on yellow rectangles. On December 5 a Whitley noted had 'AH' on the sides of its nose in white whilst the Horsa on tow had a Sky 'B' on the side nose door. This machine bore only Type C blue-white-red underwing roundels and carried DP294 in red beneath the wings. At this time fuselage serials on Horsas were usually Dull Red, later some were black. Some of the HGCU gliders had red nose letters repeated in some instances on the front of the nose.

#### Early Horsas used by HGCU Brize Norton

DP 280 delivered 24.7.42, 281 15.7.42, 282 17.8.42, 83 11.8.42, 284 17.8.42, 285 21.9.42, 288 17.8.42, 289 31.7.42, 292 21.8.42, 293 24.7.42, 294 30.7.42, 303 19.8.42, 304 5.8.42, 306 2.8.42, 310 20.10.42, 714 7.42 crashed 4.8.42, 715 20.7.42, 716 20.7 crashed 6.8.42, 717 1.8.42, 743 5.9.42, 745 17.8.42, 747 21.7.42, 748 10.42, 751 1.8.42, 755 30.7 crashed 2.9.42, 756 14.8.42, 763 11.9 crashed 29.9.42, 763 16.8.42, 765 26.8.42, 769 12.9.42, 770 6.8.42, 772 5.9.42, 773 28.8.42, 776 28.8.42, 777 29.8.42, 794 27.9.42, 795 22.8.42, 796 5.9.42, 798 5.9.42, 807 21.9.42, 808 21.9.42, HS 101 28.7.42, 103 28.8.42, 105 23.9.42 and 108 16.9.42. All of these Horsas probably bore training glider camouflage.

#### Early Horsas used by No 296 Squadron

DP 311 delivered 27.9.42, 329 13.9.42, 394 22.11.42, 800 24.9.42, HS 109 14.10.42, 114 19.10.42, 117 19.10.42, 120 6.11.42.

#### Horsa production — first three production batches

Harris Lebus DP279-294, 303-315, 329-353, 368-399, 412-440, 484-506, 513-562, 567-575, 592-631, 644-681, 689-713 (300 aircraft).

Austin Motors DP714-726, 739-777, 794-841 (100 aircraft).

Airspeed HS101-150 (50 delivered as complete aircraft).

DP288 can be seen to have a black fin and rudder. This Horsa arrived at HGCU August 17 1942 and remained with the unit until transferred for experimental work to RAE Farnborough on December 5 1944. Two days later it was struck off effective flying charge (IWM).



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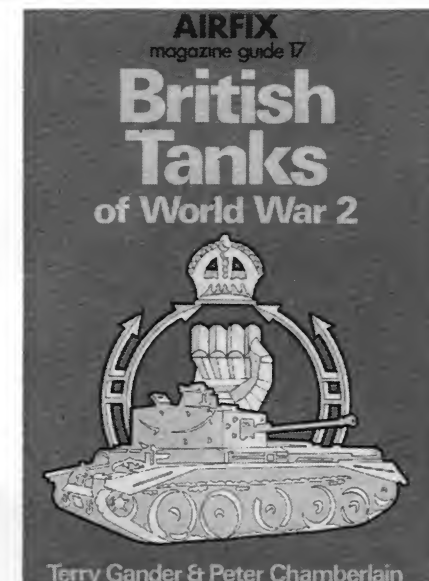
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by Jerry Scutts

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# Infantry weapons for the 1980s

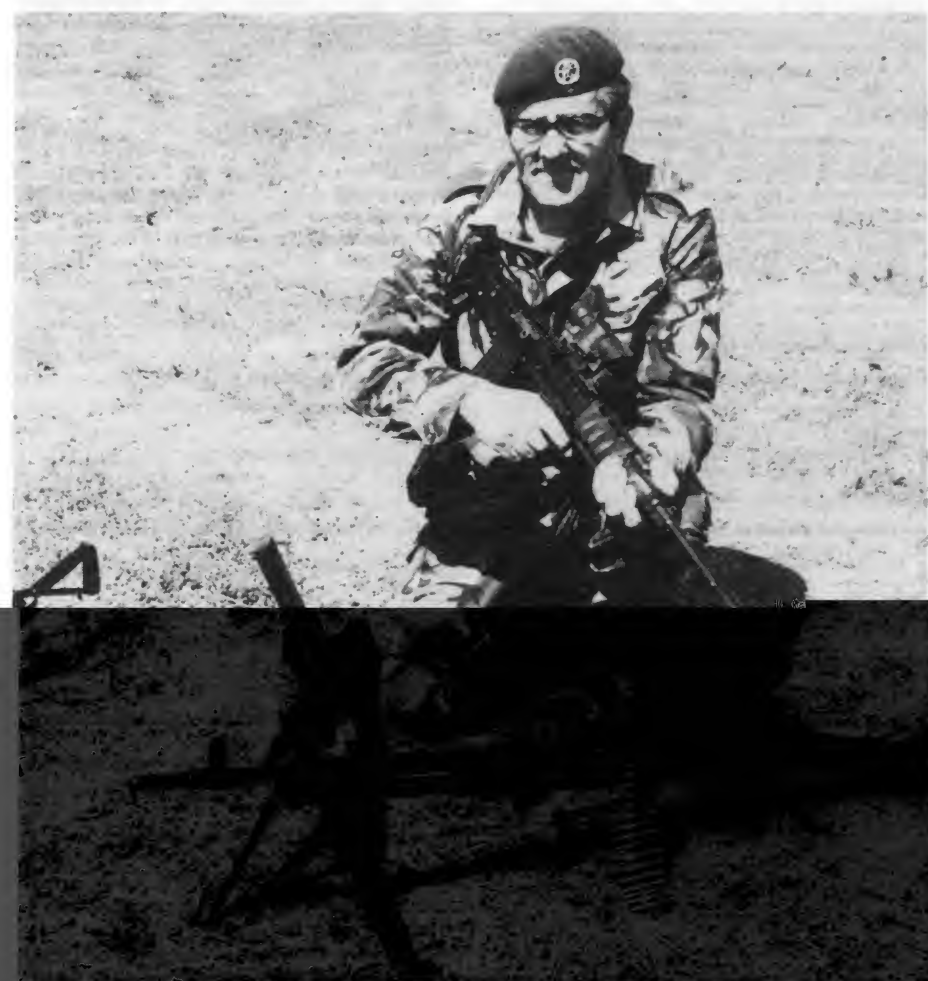
Special report from Terry Gander

FOR SOME TIME now it has been an open secret that certain NATO countries have been unhappy with what is supposed to be the standard NATO infantry round, the 7.62 x 51 mm round (ie the round is 51 mm long and has a diameter of 7.62 mm). The reasons for this disaffection have several roots, not the least of which is that the round is quite simply too powerful for its intended task, and is therefore too large physically and too heavy. As a result the NATO nations have decided to adopt a new smaller and lighter round but, as so often occurs, the exact calibre and round to be

chosen is a matter for contention between nations and governments. The result is that there is to be a NATO 'contest' between the national solutions, which will be in the form of a series of trials and troop trials taking place over the next two years.

There are several entrants for the trials. One of the favourites would seem to be the American 5.56 mm round which is already in large-scale service all over the world and it is the adoption of the round by the US services that is one of the bones of contention among the NATO Allies. But it seems unlikely that the American round will be

An instructor of the Small Arms School Corps holding the Infantry Weapon. Before him are two of the weapons that will be replaced, the L4A3 Light Machine-Gun (formerly the Bren) and the GPMG.



adopted for NATO use. One of the main reasons for this is that the American 5.56 mm round is now some 25 years old and is capable of no further development to meet the needs of the 1980s. The 5.56 mm round will be present at the trials. The round will be used as a 'control', and the round will be used in the French entry which uses a new rifle. A 5.56 mm round will be used in the Belgian entry, but at the time of writing it seems very likely that this round will be a new one, using a different charge and rifling twist. The West German entry is still shrouded in uncertainty at the time of writing but it seems very likely to be a new 4.3 mm round, and another uncertainty lies with the expected American entry, about which nothing is known yet. The British entry is a new 4.85 mm (0.191-inch) round with two new weapons to fire it, and the first showing of these weapons and the ammunition took place at Warminster on June 14 this year.

The choice of 4.85 mm as the new British calibre has been made after a long series of trials and much calculation. Quite apart from the present NATO contest, the story of the British service calibre is an involved one. For many years during this century the service calibre was 0.303-inch (7.7 mm). The round used was intended for use at ranges of over 1,000 yards, but by the time World War 2 came round it had been realised that most infantry combats took place at ranges of under 400 yards or less, and thus the 0.303 round was unnecessarily powerful. By 1943 the German Army had taken this to its logical conclusion and produced the 7.92 x 33 mm 'kurz' (short) round to be fired from the MP43 assault rifle, but the UK and the USA kept their full-power rounds until well after 1945. But in the UK the lesson was noted and work began on a new round. For the new round the designers looked back to before 1914 when a calibre of 0.276 in (7 mm) was chosen for the new P'13 rifle. This was not used in service but by the early 1950s the calibre was used again for a new short or intermediate round, this time known as the 0.280. A new rifle was developed for this round in the shape of the EM-2 (the EM-1 was not developed beyond the prototype stage) and it was announced that this would be the new British service weapon. That was in the early 1950s but soon after the idea of a standard NATO ammunition was mooted. The British 0.280 round was deemed too light and the NATO choice fell upon the American 7.62 mm round, which was little else than the American full-power round used during World War 2 updated to more modern standards. This became the standard NATO round and the British 0.280 round and the EM-2 were relegated to the museums. But the British idea was proved right in the long run. The American forces adopted the small 5.56 round which was even smaller and lighter than the 0.280, and the NATO nations in Europe found themselves with expensive and heavy weapons that were needed to fire the powerful 7.62 mm round.

The British developments continued over the years. An experimental 6.0 mm round was tried but in about 1970 a choice of 4.85 mm was made. A new rifle and light machine-gun was developed for the new round and it was these that were shown at Warminster. At first sight both seem to be



very similar to the old EM-2 design but the similarities are superficial and the mechanisms are different. Both use the 'bullpup' configuration in that the magazine is behind the trigger. This gives a greater length of barrel for the total length of the weapon and as the mechanism is behind the trigger, the balance and 'feel' of the weapon is enhanced.

The new rifle, known as the Individual Weapon (IW), can fire both single and automatic. It uses a 20-round magazine, and is fitted with an optical sight. This sight is very easy to use, so easy in fact, that when the author fired a full magazine for the first time, every shot on single and automatic hit the targets which were at 50 and 300 metres. The rifle is light and easy to use, but the cocking handle and loading arrangements take a bit of getting used to as they are behind the trigger and the cocking handle is almost in one's shoulder. Steel stampings and plastics are extensively used to cut costs and speed production. The IW can be fitted with a small bayonet, and a grenade launcher and night sights are still under development.

The new light machine-gun, known as the Light Support Weapon (LSW), is very similar to the rifle and in fact they have an 80 per cent component commonality. The LSW is fitted with a light bipod and has a longer barrel, but its main advantage is that it is very light for a weapon of its type. It uses 30-round magazines but these are interchangeable with the IW magazines, so

at last the infantry section can go into action with only one type of ammunition to worry about. At present they have three. The section leader carries 9 mm rounds for his L2A3 submachine gun (the Sterling). The riflemen carry 7.62 mm ammunition for their L1A1 FN rifles, and the man with the GPMG has to carry the same rounds fitted into belts. At present an infantry section is made up of seven or eight riflemen to one GPMG but it seems very likely that in future this will be changed to two sub-sections each with one LSW to every three IWs. This arrangement will give not only greater firepower but more tactical flexibility.

But this is looking very much into the future. The new weapons are unlikely to come into service until well into the 1980s. The main reason for this is, of course, that

the new NATO calibre has not yet been established and is unlikely to be finalised until 1979 at the earliest. But the new British weapons can be adapted to suit whichever calibre is finally chosen, and it seems very likely that the IW and LSW, both developed by the Royal Small Arms Factory, Enfield, will have a very long life in front of them. In the meantime the British soldier will just have to get on with the job of lugging weapons and ammunition around, both of which are too powerful, heavy and expensive for the task they have to perform. If only that 0.280 and the EM-2 had been adopted! But that is yet another example of political expediency taking precedence over practical considerations. Let us hope the same does not occur with the new NATO round

## Data

<b>Ammunition</b>		
Calibre	4.85 mm/0.191-inch	
Weight of round	11.6 grams/178.63 grains	
Types available	Ball. Tracer. Blank.	
<b>Weapons</b>		
	IW	LSW
Length	77 cm/30.3-inch	90 cm/35.4-inch
Length of barrel	51.85 cm/20.41-inch	64.6 cm/35.4-inch
Weight loaded	4.12 kg/9.0625 lb	5.26 kg/11.59 lb
Muzzle velocity (V <sub>0</sub> )	900 m/s/2952 ft/sec	930 m/s/3051 ft/sec
Magazine capacity	20 rounds	20 or 30 rounds
Rifling grooves	4	4
Both weapons are gas-operated and use a rotary forward-locking breech block, or bolt. Ejection is to the right but some weapons will be made ejecting to the left to suit left-handed users.		



# Squadron codes

and colours 1939-56

By Michael J. F. Bowyer and John D. Rawlings

## OB No 45 Squadron (c)

This code was used throughout World War 2 by No 45 Squadron, at first in the Middle East and then in the Far East, on Blen-

heims, Vengeances, Mosquitoes and, after the War, in Malaya on Beaufighter TF 10s, Brigands, Buckmasters and Hornets until the mid-1950s. Examples are Blenheim I



OB:W-L8612; Vengeance IA OB:L-879; Buckmaster T 1 OB:Z-RP198; Brigand B 1 OB:V-VS859; Hornet F 3 OB:K-WF959.

## OB No 53 OTU

An unconfirmed report has quoted this combination as used by No 53 OTU at Hibalstow.

## OC Station Flight, Sandtoft (c)

Allocation confirmed, no report of its use.

## OC

Used by the P-47s and P-51s of 356th Fighter Group and their 359th Squadron from August 1943 to November 1945.

## OD No 6 OTU

Hudsons coded 'OD' in 1941-42 are believed to have been operated by No 6 OTU at this time. Examples are Hudson I OD:N-N7338; Hudson III OD:J-V9029.

## OD No 56 OTU (c)

Used by Typhoons and Tempests of this OTU at Millfield from 1943 to the end of World War 2. Examples are Typhoon IB OD:F-JP790; Tempest V OD:12-NV825.

## OE No 168 Squadron

This squadron was formed at Snailwell on June 15 1942 with Tomahawks which carried the letters 'OE', at least after moving to Bottisham in July 1942. In November 1942 the Tomahawks were replaced by Mustangs and it is possible that the code combination was dropped then. One of the Tomahawks was OE:A-AK118.

## OE

Carried by the B-17s of the 335th Squadron of the 95th Bomb Group, USAAF, from April 1943 to August 1945.

## OE No 661 Squadron

Used by Auster IIs and Auster IVs of this squadron on the continent in 1944/45.

## OF No 97 Squadron (c)

No 97 Squadron carried the letters 'OF' throughout World War 2 and afterwards until 1951. At first it was a training squadron with 6 Group, flying Whitley IIs, but in May 1940 it disbanded into 10 OTU at Abingdon. It was reformed with Avro Manchester IIs at Waddington in February 1941 and quickly followed these with Lancasters and then, in 1946, with Lincolns. Examples of its aircraft are Whitley II OF:A-K7229; Manchester I OF:X-L7453; Lancaster III OF:J-PB410; Lincoln B 2 OF:M-RE289.

## OG No 1665 HCU (c)

This HCU formed at Waterbeach on May 1 1943, later moving to several Yorkshire bases, spent most of its time training crews for Transport Command flying Stirlings and Halifaxes. Examples are Stirling III OG:B-EF121; Halifax III OG:P-LW208; Halifax V OG:C-LL340; Halifax VIII OG:F-PP368.

## OH No 120 Squadron (c)

This squadron was re-formed at Nutt's Corner in June 1941 as the first Liberator maritime recce squadron. It flew Liberator IIs from there until July 1942 when it moved to Ballykelly, the IIs being superseded by IIs and IIs on which the letters were dropped.

Top to bottom This Beaufighter TF 10 of 45 Squadron is unusual in carrying bomber-style black and grey trim: A Lincoln B2 of 97 Squadron at Singapore in 1947, showing the flag; One of 120 Squadron's Liberator IIs, equipped with a four-cannon battery under the fuselage; Wellington Ic OJ-W of 149 Squadron at Mildenhall in 1940.

It is believed that they were revived in 1945, confirmation would be welcome. Examples are Liberator I OH:X-AM925; Liberator VIII OH:D-KH177.

## OI No 2 Squadron (c)

No 2 Squadron flew Spitfire FR 14s and PR 19s on tactical recce duties with 2nd TAF during the invasion of France and the conquest of Germany. After the war it was part of BAFO and retained its Spitfires until March 1951. At some time whilst in France it began using the codes 'OI', keeping them until re-equipping with the Meteor FR 9 in 1951. Examples are Spitfire FR 14 OI:G-TZ112; Spitfire PR 19 OI:K-PM555.

## OJ No 149 Squadron (c)

This veteran 3 Group squadron carried 'OJ' letters on its bombers from the outbreak of World War 2 until April 1951. At first it flew Wellingtons, then Stirlings, then Lancasters and, after the war, Lincolns and Washingtons. Examples are Wellington IC OJ:F-P9267; Wellington II OJ:Q-W5399; Stirling I OJ:G-N6102; Stirling III OJ:F-EF412; Lancaster I OJ:W-NG248; Lancaster B 1 (FE) OJ:T-TW887; Lincoln B 2 OJ:V-RA709; Washington B 1 OJ:U-WF492.

## OK No 450 Squadron, RAAF (c)

This Australian fighter squadron served throughout the Western Desert, Sicilian and Italian campaigns in World War 2, flying Kittyhawks principally, although it began with Hurricanes. It is not certain whether the 'OK' letters were carried on the Hurricanes but they were on the Kittyhawks. Examples are Kittyhawk I OK:V-AK717; Kittyhawk III OK:K-FR786.

## OK No 3 General Reconnaissance School (c)

This unit, flying Ansons at Leuchars towards the end of World War 2, used the letters 'OK', eg Anson I OK:O-EG428.

## OL No 83 Squadron (c)

This combination was used by No 83 Squadron from the outbreak of World War 2 until code letters were dropped from operational units in April 1951. They first appeared on Hampdens at Scampton in September 1939 and were carried successively on Manchesters, Lancasters and Lincolns. Examples are Hampden I OL:E-P4376; Manchester I OL:D-R5780; Lancaster I OL:T-R5630; Lincoln B 2 OL:G-RF369.

## OM No 107 Squadron (c)

This light bomber squadron serving with 2 Group throughout the war carried 'OM' on its Blenheims, Bostons and Mosquitoes until it was re-numbered 11 Squadron in 1948. Examples are Blenheim IV OM:R-L9272; Boston III OM:V-Z2179; Boston IIIA OM:R-BZ281; Mosquito FB 6 OM:D-TA 489.

## OM No 11 Squadron (c)

When 107 Squadron was re-numbered 11 Squadron at Wahn in October 1948 it retained the letters 'OM' on its Mosquitoes for a short while before they were recoded 'EX'. One of these Mosquitoes was OM:D-TA489.

## ON No 124 Squadron (c)

Formed at Castletown on May 10 1941, this fighter squadron used 'ON' on all the Spitfire variants it flew throughout World War 2 and on its Meteors immediately after the war until re-numbering as 56 Squadron in April 1946. Examples are Spitfire VB ON:X-AA920; Spitfire VI ON:H-BR579; Spitfire HF VII ON:H-B5142; Spitfire IX ON:T-RR252; Meteor F 3 ON:Y-EE389.

# Talking wargaming

This month, wargames terrain by Donald F. Featherstone

MUCH OF THE pleasure of wargaming lies in the colourful and realistic appearance of the terrains we build. When attractively set out to represent countryside, a table-top battlefield provides an immediate stimulus to the viewing wargamer; to fight a wargame without any terrain features resembles a stage play set against a black or single colour backdrop. It can be done but it requires a good imagination to derive adequate visual benefit from it.

Model railway hobbyists construct track-side and background scenery that is extremely realistic, being aided by a permanency denied to wargamers whose battles rarely take place on identical fields. Nevertheless, not only is it within the powers of the wargamer to devote time and ingenuity to constructing realistic scenic terrain but, pursuing authenticity in tactics, uniforms and the composition of his formations, he must adequately consider this terrain factor.

Wargaming is an attempt to realistically reconstruct the tactical manoeuvres of armies of various periods, employing little metal or plastic warriors that lack sense and mobility so that they require life grafted on to them through ourselves, which obviously tends to detract from realism and authenticity. Compensation for such deficiencies lies in taking great pains to bring realism to the other static factor of warfare — the terrain upon which the battle was fought.

The initial build-up to a wargame is adequately set by the vista of hills, valleys, rivers, roads, woods, hedges, houses, villages, castles, ruins, walls, fences and other topographical features. Such features provide a realistic representation of the battle area and frequently are the only means of establishing the period and locale of the conflict — fighting with the Foreign Legion gives you the right to expect a sandy terrain with palm trees!

When attempting to reconstruct any real life battle, the terrain is perhaps the most important factor because its physical features and dimensions must closely resemble the actual battlefield, otherwise what takes place upon it will bear only the most coincidental resemblance to the historical events under simulation. Imagine trying to fight Waterloo without the ridge, Hougoumont or La Haye Sainte; Gettysburg without the Round Tops, Cemetery Ridge or Devil's Den!

There are two essential factors to consider: first, the terrain must be built to the actual 'fighting' areas of the battlefield so that all possible space on the wargames table is utilised; and second, even though it might mean 'ironing out' the known contours of the actual battlefield, all hills and slopes must be so angled as to allow model

soldiers to stand up on them.

If the wargame is an imaginary one, perhaps forming part of a campaign, then the constructed terrain must resemble the features on the campaign map. Real life warfare has politico/economic background factors which rarely intrude into our table-top battles, making them largely a matter of one side or the other fighting for and gaining advantageous topographical positions. This means that such terrain features as hills, crossroads, river bridges, etc, form objectives that enable wargamers to decide who has won the game and at what stage.

A thinking wargamer takes stock of the terrain upon which he is to fight and considers those factors which might be beneficial or detrimental to his plans. For example, he will readily appreciate that terrain that tends to restrict movement is more favourable to infantry than other arms; houses, farms and villages afford advantages in defence to infantry only. If the country to the front of his force is cultivated and not too enclosed then he might consider attack to be his best policy, because his infantry will gain a succession of cover-positions allowing them to come to more equal terms with the defence. On the other hand, if the ground in front of the enemy position is open then he will realise that defending infantry have a clear field of fire which will destroy him as he attacks.

If he is fighting in the 18th Century or a period where effective musket range was short he will seek flat open ground that will permit his cavalry to approach within striking distance of infantry. But if fighting in a period where firearms are more powerful and accurate, then his cavalry must be kept at so great a distance that there will be little opportunity for them to be employed. Gone will be the thrill of glorious cavalry charges and the outcome of the battle will no longer be swayed by a powerful punch from a horsed force — now his cavalry must operate as a 'threat in being', probably only coming into their own when pursuing a retreating army.

If he wishes to bring his horsed-arm within striking distance of the enemy then he must do so by means of an approach screened both from fire and view for surprise is now his only chance of success. This is done through intelligently formulated rules that eliminate the all-seeing eye of the opposing wargamer/general by means of undulating and moderately broken ground, by wooded country. Ideally, when cavalry finally comes into action the ground must be as open as possible, level and free of obstacles. When a wargamer is faced with a terrain covered by hills or woods then he should leave his cavalry at home.

Continued next month



# NEW KITS AND MODELS

## Heller Bf 108

THIS FOUR-SEAT low-wing light aeroplane, which was the predecessor of the famous Bf 109, has been neglected by kit manufacturers which, in many ways, is not all that surprising as its appeal to the mass market at which they aim is probably very limited. Nonetheless, it is an extremely interesting aeroplane and there are still some flying today, which occasionally appear in films masquerading as their more warlike cousins.

Used by the Luftwaffe as a communications and training aircraft, the Bf 108 has an important place in any definitive collection of World War 2 German aircraft, so Heller's well-done 1:72 scale kit is a welcome newcomer.

As with the company's 109K released at the same time, the mouldings are of very good quality and fit together with no trouble, filler only being needed in one or two places around the wing roots and tailplanes.

The approach used by Heller for the cockpit is novel as it comprises a moulded interior into which the seats and control column fit and once assembled and painted is fitted over the wing centre-section.

The delicate mass balances and tailplane struts are as near to scale as is possible in this size and little would be achieved by replacing them with stretched sprue components.

Markings for civil and military versions are provided but once again Heller have slipped up on the quality of decal printing. This is not as serious as it is with the 109K and F-104 as the sheet is printed only in black. But the carrier film is heavy and the gloss finish certainly detracts from the finished model.

Overall this is a good model and makes a pleasant change from the more warlike German aircraft which abound in plenty in kit form.

## Frog Sea Vixen

RECENT RELEASES of modern American Navy fighters must have made some devotees of the Fleet Air Arm and its aircraft despair, not only for the sad demise of a great service but also the lack of kits of some of its more popular aircraft with which they could capture for ever its days of glory.

Happily one of these aircraft has at last appeared and appropriately enough it has come from Frog who over the years seem to have become something of specialists when it comes to aircraft with sea boots.

The Sea Vixen is one of those aircraft which has a magic all its own and the kit now generally available will be welcomed by all modellers of jet fighters.

Originally designed to meet the same specification as the Javelin, the DH 110, from which the Sea Vixen evolved, had an unhappy start to its career and it looked to be doomed when the Gloster delta was chosen by the RAF. But extensive redesign turned it into a much better aircraft than the Javelin

and the Navy — so often the poor relation — gained a first class strike fighter.

Moulded in the now familiar dark blue plastic used by Frog in many of their recent releases, the Sea Vixen is a first rate kit and makes up into an accurate model of the twin-boomed carrier-borne aircraft.

There are several innovations, including two sets of wings for aircraft with everything folded or in the flying configuration, and an alternative domed cover for the observer's 'coal hole' — as it was called.

The wings and tailplanes benefit from attention to their trailing edges which are a little on the thick side and similarly replacement of undercarriage doors also improves the final overall effect. The tailpipes are blanked off and the intakes have solid walls which prevent a see-through fuselage but it is best to spend a little time in these areas and improve them by thinning down the intake splitters and drilling out the tailpipes, blanking the fuselage off further inside. Wheel wells and oleo legs are well detailed but it is rather sad that Frog chose to mould the nose wheel as an integral part of the nose wheel leg. The Matra pods are best replaced with

similar parts from another kit, but once the Red Top missiles have their fins reduced in thickness they are as good as any available. The ejector seat is poor and Nelson must be rotating in his grave at the representation of the Naval pilot.

Decals for aircraft of No 899 and 829 Squadrons are up to the expected high standards set by Frog but it is worth recording that XJ580 went to the RAE at Farnborough not the RAF as claimed on the box art.

The Sea Vixen kit provides a lot of scope for detail work, especially if the wing folded version is chosen, but to convert it back to an FAW 1 would be a major conversion which no doubt some of the keener types will try during the dark winter evenings. This model is highly recommended and it would be nice to see Frog give their Naval treatment to an updated Attacker or Scimitar.

## M48 Scissors bridge

THE LATEST AFV kit from Revell, under their own imprint rather than that of Italaerei, depicts the American M48 bridgelaying or 'Armoured Vehicle Launched Bridge' (AVLB) to give it its correct designation. The kit, which is to 1:40 scale — unfortunately, since it won't go in a collection with most other kits — depicts the early version of this tank mounting two 12.7 mm machine-gun turrets.

Cleanly moulded in olive green polystyrene with very little flash, the kit is a challenging one to build if you wish the scissors bridge to unfold, a task which is

Continued on page 48



Above Revell's M48 scissors bridge in 1:40 scale. Below Frog's Sea Vixen in 1:72.



# MODELLHOYS

## PLASTIC KIT SPECIALISTS — ASSOCIATE MEMBER I.P.M.S.

### MODELDECAL DECALS

1/72 SCALE

All listed sets available:

1. BAC Lightning Mk. 1A, 2 and 6 (six alternatives in RAF service).
2. F-4 Phantom (VMAF-531, USMC, 497th TFS, USAF and 767 Sqn., RN).
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4. U.S. Navy, F4U-1A Corsair, VF-17, SB2C-3 Helldiver, OS2U-3 Kingfisher.
5. RAF Hunter F.6, 14 Sqn.; Phantom FGR.2, 6 Sqn.; Meteor F.4, 63 Sqn., and Harrier GR.1, 1 Sqn.
6. USAF-S.E. Asia RF-101C, F-105D, A-1H and EC-47N.
7. F-102A, 460th FIS, USAF; Harrier GR.1, 4 or 20 Sqn. RAF Sabre 6, 430 Sqn. RCAF and alternative RCAF Sabre fin emblems.
8. AC-47 432 TRW, and USMC OV-10A Bronco, HLM-267.
9. T-33, RCAF; F-35 Draken Danish Air Force, Mosquito FB VI, 4 Sqn. RAF; Skyhawk, RAN, and A-4K squadron markings for 75 Sqn., RNZAF.
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11. West German Air Force and Navy, RF-4E Phantom, AG51 or 52, F-84F Thunderstreak, Jabo 33; RF-84F Thunderflash, AG51; Sea King Mk. 41.
12. H.S. Buccaneer S.2's, 800 and 809 Sqn., F.A.A.; NF-5A Freedom Fighter, 314 or 315 Sqn., Dutch Air Force, and L-20A Beaver, Dutch Air Force.
13. A-4E Skyhawks VMA-311 VA-94, A-4F Skyhawk, VA-164, Skyraider, VA-65.
14. A-7D Corsairs, 356 TFS, 354 TFW., 40 TFS, 355 TFW., with alternative decals for 357 TFS, 355 TFW., T-33A, 50 TFW., and F-86A Sabre, 116 FIS.
15. Phantom F.1., 43 Sqn. Harrier G.R.1A, 3 Sqn. Lightning F.2A, 92 Sqn. All RAF. CF104 Starfighter 421 Sqn. C.A.F.
16. RAF Hunter F.6, 79 Sqn. Phantom F.G.R.2 41 Sqn. Sea Venom F.A.W.21 809 Sqn. Sea Venom F.A.W.21 890 Sqn. F.A.A. Wyvern S.4, 831 Sqn. F.A.A.
17. Lightning F.2A, 19 Sqn., Canberra B(1) 16 Sqn., Harvard T.2B, 500 Sqn. Hunter FGA 9, 45 Sqn. All RAF.
18. Buccaneer S.2B, 15 Sqn. Hunter FGA.9, 58 Sqn., Canberra B.2 10 Sqn., Gazelle C.F.S. All RAF. F.104 Starfighter, 1974, Hunter T.7, 4TFS, RAF, 1973 (or 56 Sqn. 1962), Phantom FGR.2, 117 Sqn. RAF, Coningsby, 1974. Buccaneer S.2A, 208 Sqn. RAF, Honington, 1974.
19. Canberra E.12, 30 Sqn. RAF, 1974, Hunter T.7, 764 Sqn. FAA, 1964, Lightning F.3, 29 Sqn. RAF, 1971, Jet Provost TS, 3TFS, "The Swords" RAF Leeming, 1974. (Serials provided to make any one of Team).
20. BAC-SEP Jaguar GR.1, 14 Sqn. RAF, 1975. BAC-SEP Jaguar T.2, 14 Sqn. RAF, 1975. Rep. F-84F Thunderstreak, 314 Sqn. Dutch A.F. Rep. RF-84F Thunderflash, 717 Sqn. Norwegian A.F. L. C-130H. Hercules, 721 Sqn. Danish A.F. 1975.
21. G. US-2N Tracker, 320 Sqn. Dutch Naval A/S. G. Javelin FAW.8. Can be finished for either 41 Sqn. RAF or 85 Sqn. RAF, 1963. BAC-SEP Jaguar GR.1, 17 Sqn. RAF, 1975. BAC-SEP Jaguar T.2, 17 Sqn. RAF, 1975. Phantom FGR.2, 29 Sqn. RAF, 1975.
22. H. Fury I, 15673, 1 Sqn. RAF, Tangmere, 1937. B. Bulldog IIA, K2151, 23 Sqn. RAF, Kenley, 1932. G. Gladiator I, K8027, 87 Sqn. RAF, Debden, 1938. A.W. Siskin IIIA, J8959, 43 Sqn. RAF, Tangmere, 1930.
23. H.S. Sea Vixen FAW.2, X9923, 766 Sqn. FAA, May 1968, or 890 Sqn. FAA, Sept. 1968. Additional emblems and part serials included also for machines of 892, 893, 899 Sqn., and R.N.A.Y. Sydenham, Super Mystere B2, E.C.2/12 L'Armee de l'Air, 1971. F-100D Super Sabre, 727 Sqn. R. Danish A.F. 1973. Sepeval Jaguar A or E 7. Esc. L'Armee de l'Air, 74-75.

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### FUJIMI A/C KITS

G.E.-2A Hawkeye	1/72	1.63
ME. B1110c	1/48	2.50</





Above Revell's 1:28 scale Camel in the markings of Roy Brown's aircraft. Below The same company's Spad XIII as flown by Eddie Rickenbacker.



not made easier by the rather confused instruction sheet. Unfortunately, this is the sort of kit which appeals to 'junior' for its play value, but which younger modellers will have great difficulty in assembling and will probably break within ten minutes even if someone else builds it for them. Conversely, being to the wrong scale to fit most serious AFV collections, it will only have a limited appeal to MAFVA members, etc.

### Revell Camel

WHEN REVELL first released their 1:28 scale Camel, large kits were something of a rarity and it received well deserved accolades, and those who missed it first time round will now be able to see what all the fuss was about.

The kit is basically identical to the first issue but it does appear to have been cleaned-up in certain areas and a figure has been added to the multitude of moulded green parts.

With the gradual acceptance of 1:32 and 1:24 scale kits the Camel is still slightly out on

a limb, but as a Spad X111 and Fokker Triplane are also available, World War 1 collectors can gather a very nice trio of models to a common scale.

A check of a fair selection of Camel reference material indicates that Revell have come unstuck in two areas within the cockpit; the first is the disposition and size of the instruments, and the shape of the control column grip, the latter is round whereas photographs show this to have been triangular. Externally there are few complaints but one that is rather evident is that the fuel tank filling point immediately behind the cockpit should be offset slightly to starboard and not located on the aircraft's centre-line.

Some Camels had additional cooling slots cut in their engine cowlings but detail such as this would need to be checked against reference material for the particular aircraft being modelled.

Assembly is straightforward and presents a tremendous amount of scope for the fanatic. For example, it would be fairly simple to

spend a lot of time improving the pilot's seat, improving the cooling jackets of the machine-guns, and detail painting the engine and interior detail, which would all be time well spent. Whilst doing this it would also be a good idea to cut the interplane struts from their top/bottom bar fixing, filling the accommodating slots in the wing surfaces, and fixing the struts individually.

Rigging is added as construction proceeds so it is advisable to read the instructions well before putting cement to plastic, similarly decals — which are for Captain Roy Brown's aircraft — must be assigned carefully and in some cases placed in position before final assembly.

It is good to see this kit back in plentiful supply and Revell's commercialism in releasing it again is almost certain to bring suitable reward.

### Revell Spad X111

REVELL'S SPAD X111 in 1:28 scale makes an ideal companion for their Camel, and is again a reissue of an earlier offering.

This famous French World War 1 aircraft is equal to the Camel in quality of moulding although it somehow seems to lack a little of the delicacy that comes over in contemporary pictures of this aircraft. This time round Revell have chosen the markings of American Ace Eddie Rickenbacker and these include the rather hard-to-paint star emblems for the wheel hubs.

The Spad kit, like the Camel, is identical to the earlier kit but has two crew figures added to the sprues as well as a pilot, and although these would enable an attractive diorama to be constructed they do look a little 'wooden' and would benefit from some attention to animation.

The kit is accurate but the scalloped edges to the flying surfaces is not too convincing and the rib sagging is a little coarse.

Once again the model gives the basic foundation for the dedicated World War 1 collector to spend many happy hours turning his kit into a masterpiece, and no doubt many of the new generation of modellers who have grown up since the kit first appeared several years ago will relish this task.

### Revell Phantom

REVELL WERE one of the first to produce a kit of the Phantom II when they released an F4B several years ago. This kit has been overtaken in the last few years by better offerings from most of the leading manufacturers and it has become obvious that sooner or later Revell would consider it in their updating programme. They have now done this but seem to have missed the boat as they appeared to have a golden opportunity of presenting the ultimate 1:72 scale model by scaling down their 1:32 kit, but alas they have not done this.

The kit is moulded in a peculiar light brown semi-transparent plastic and has a plethora of oversize rivets which need reducing or better still, eliminating. Overall shape is good but care must be taken when fixing the nose cone or it is easy to overdo the characteristic downward tilt of the nose. The slotted leading edges of the tailplanes are well produced and these are now correct in span — on the previous kit they were a trifle too short.

Four Sidewinders and four Sparrow missiles for the inboard pylons are supplied in the kit and these benefit by having their fins



Rareplanes have just released this very fine vac-form kit of the world-famous DC-4 airliner in 1:72 scale. The company, who are already renowned for their attention to detail, have really pushed the vac-form process to its limits with this model, which is being produced in a limited production run at £4.50. The 1:72 scale plans included in the kit show colouring details for a smart United States Navy R5D-3 in 'Operation Deepfreeze' markings, but we have news that three special decals are to become available shortly which feature a Capital Airlines DC-4, a British Midland DC-4M and a colourful USAF C-54 in MATS insignia. The kit can be obtained direct from Rareplanes, 69 Redstone Hill, Redhill, Surrey.

replaced by new ones from plastic card. There is also a complement of wing and centre-line tanks which enable the model to be completed fully loaded, which in this reviewer's opinion always makes the Phantom 'look' right.

The cockpit transparency is very delicate and fits well allowing easy viewing of the interior which has the basic parts to enable a lot of detail to be added.

Decals for three aircraft in camouflaged schemes for aircraft of the 414th Squadron, 58th Squadron and the 469th Squadron, the second of which is the aircraft flown by Captain Steve Ritchie when he destroyed two MiGs, are nicely printed and all number keyed to the well detailed instruction sheet.

With some effort this kit can be made into a nice model of the Phantom II but it's still a long way short of being the best of the kits available.

### Profile cards

THERE CAN BE few modellers or aviation enthusiasts who are not familiar with Profile Publications and it was a sad day when their individual aircraft monographs stopped appearing.

The company have now released four Data Cards covering the Bf 109E, P-47D, Ju 87B and Bf 109G, each being a double-sided printed laminated sheet with coloured side views on one side and brief histories illustrated by black and white photographs on the other.

The idea is a good one and will be welcomed in modelling circles but unfortunately the standard of the coloured drawings and the reproduction of the colours does leave something to be desired. The views are new ones that have not been seen in Profiles before but from a modelling point of view great care has to be taken on interpretation of colour demarcations. This is particularly noticeable on the Bf 109E and Ju 87B where the shadow of the tailplanes has printed as a red line on the rudder of the Ju 87 and a green one on the Bf 109. Although to the experienced modeller it is obvious what these colours represent, the younger purchaser could easily be misled into believing that these aircraft were painted in a most peculiar manner. Some of the colour render-

ings are also suspect but this is only to be expected as it is very hard to reproduce accurate colours when working to a budget. The brief histories are just that, being no more than a few hundred words and the principal dimensions of the aircraft concerned.

At 30p each the cards are fairly good value especially to the 'pocket money' market, but the more serious collector will already have most of the information contained and may well look twice before buying.

Future issues include the Fw 190A, B-25, Spitfire V, Mirage III, Bf 109F, Camel and the B-17G.

### Heller F-104G

FOR A LONG time modellers of jet fighters have hankered for a good kit of the F-104 in 1:72 scale and their prayers are now answered by Heller who offer what is, in our opinion, the finest kit of this model to date.

Not only has the wait been worthwhile from the point of view of accuracy but also choice of subject as, from this Heller kit, it is possible to construct no less than five versions of this familiar aircraft, from the basic kit components and decal sheet.

Of particular note is the fact that Heller provide alternative parts for the two seat TF-104G and have achieved this by including two separate nose mouldings and, of course,

an additional canopy.

Interior detail is first rate and includes ejector seats, instrument panels, control columns and side consoles. The undercarriage comes into the same category and has finely detailed wheels and oleos. The mouldings themselves are very clean and have slightly raised panel lines and scribed control surfaces. One of the characteristics of the F-104 is its extremely thin wing and Heller have captured this ideally by moulding it as a part of the rear fuselage, thus there is no problem in setting the anhedral or filling wing/fuselage join lines.

Four wing tanks are included in the kit but there are no missiles, a minor point that is easily rectified from the spares box if necessary.

The decal sheet is really the only area at which criticism can be aimed; although it includes five alternative sets of markings they are very poorly printed and in some cases inaccurate. On the review sample the Luftwaffe markings were unusable as they were smudged beyond recognition and the proportions of the Canadian Armed Forces insignia was incorrect, also the Canadian flag for the fin is supplied in blue/white/blue whereas it should be red/white/red.

Decals aside, this is a first rate kit and is certainly well worth buying even if you are not particularly keen on jet fighters, as the moulding is so good that assembly is bound to bring hours of pleasure.

Revell's new Phantom.







# BOOKS FOR MODELLERS

## Aviation

**B-24 Liberator in action**, by Steve Birdsall. Squadron/Signal Publications Inc, 3461 E. Ten Mile Road, Warren, Michigan 48091, USA. \$3.95.

THE ANNOUNCEMENT that Monogram are following their 1:48 scale B-17G with a B-24 later this year will no doubt have had the effect of encouraging much preliminary research by those who anticipate making this model. A good starting point for anyone who is working to a limited budget or has little access to other information, is the Squadron/Signal publication No 21 which gives a comprehensive breakdown by Steve Birdsall of this American World War 2 heavy bomber.

The story of the B-24 from its conception to a full-blown operational career is dealt with in a readable text that goes a long way to putting an end to some of the myths that have surrounded the Liberator and tended to keep it hidden in the shadow of its contemporary, the B-17.

Line drawings of the various marks, plus sketches of turrets and wing flaps as well as engine cowlings and waist gun positions, all prove invaluable to the modeller as do the six colour views contained in the centre spread. Two more colour profiles plus fin/rudder markings decorate the outside of the rear cover while the front carries the customary action painting.

Many of the photographs include useful details of ground equipment which will be of considerable help to diorama enthusiasts not only in helping them to get 100 per cent accuracy but also in giving ideas for display subjects.

Those critics of weathered models would be well advised to take a very close look at some of the B-24s illustrated before rushing into print with comments about crew chiefs never allowing their aircraft to get into the states depicted by some modellers, those on pages 5, and 20 would soon 'shoot them down in flames'!

**To Fly Like a Bird**, by Keith Sherwin. Bailey Bros & Swinfen, Warner House, Folkestone, Kent. Price £3.95.

LONG BEFORE the Wright Brothers made their historic flight man had made countless attempts to emulate the birds using their arms and feet to provide the only source of motive power. In 70-odd years the aeroplane has made enormous progress but the mystery of successful man-powered flight still represents a challenge; a challenge that has considerable financial reward for any who find the secret of meeting what appear to be simple but are in fact quite exacting conditions laid down by those who have donated the pot of gold at the end of this particular rainbow.

Keith Sherwin, who is an acknowledged expert in man-powered flight, has in his

latest book, *To Fly Like a Bird*, written the story of this type of flight and very interesting reading it makes too. Although man-powered flight has been achieved the problems of duration and manoeuvrability still present considerable challenge to the many engaged in trying to conquer them.

This extremely informative book covers just about all that one could want to know about this aspect of aviation, dealing with the subject in some depth but retaining simple explanations wherever possible. On occasions it is necessary to re-read some of the more technical aspects several times to obtain a clear understanding of the aerodynamics involved, but this is only to be expected and in no way detracts from the book's main object.

A host of photographs and diagrams complement the text and help to engender the reader with the enthusiasm that the author clearly has.

It is well worth reading and would not be too difficult to become 'hooked' on the subject, as the author says 'The field is wide open and it may well be that it is one of the readers of this book who realises mankind's dearest ambition — to fly like a bird.'

## Military

**The Zulu War**, by Angus McBride. Osprey Publications Ltd, 12-14 Long Acre, London WC2E 9LP. Price £1.75.

IT IS ALWAYS a delight to discover an author who can draw and paint as well as he can write, because then one is certain that the illustrations will be precisely what was intended, and not some other artist's 'interpretation', which spoils quite a few books. Angus McBride is just such an author, and this book on the Zulu War must rank as one of the finest offerings in Osprey's popular 'Men-at-Arms' series.

This period of history is currently becoming fashionable with wargamers and others, and will undoubtedly become more so with Michael Caine's first major film, 'Zulu', now on general release again.

The book traces the origins of the Zulu nation under Shaka, the early tribal wars and the inevitable final confrontation between the Zulus and the British and Boer colonists in South Africa. A good deal of space is inevitably devoted to the massacre at Isandlwana — the only time in modern history when properly trained and equipped European troops, armed with rifles, have been defeated by an aboriginal force without firearms — and to the heroic defence of the mission station at Rorke's Drift, in which 11 men won Victoria Crosses. But there is also a great deal of information on Zulu life and customs, the organisation of the *ibutho* (regiments), and on Zulu weapons and shields.

Even if you have already read Donald

Morris' classic book *The Washing of the Spears* there is much of interest in this new book, particularly the illustrations of Zulu tactics, the '3D' battle maps and the page showing shield construction and patterns. In addition there are eight pages of superb colour plates showing Zulu warriors of various *ibutho* as well as their British, Boer and Natal native adversaries. Congratulations to author and publishers on a fine publication.

**The Mexican-American War 1846-1848**, by Philip R. N. Katcher, colour plates by Gerry Embleton. Osprey Publishing Ltd, 12-14 Long Acre, London WC2E 9LP. Price £1.75.

AFTER WHAT we've said above about artists, we must begin this review promptly by saying that Gerry Embleton is one artist who does interpret his source material correctly and who brings to any book with which he is involved a style and flamboyance unrivalled by most. Gerry's principal interest lies in illustrating children's stories and his attitude towards military subjects is somewhat ambivalent, yet he manages to endow each of his figure paintings with a remarkably sympathetic individuality and character which is often absent from uniform illustrations in other books. This title is no exception, and Gerry's rendering of a Texas Ranger in plate E2 is surely one of his best renderings.

The text of the book itself is surprisingly patchy, considering Philip Katcher's reputation as an American military historian, and is principally devoted to the dress of the opposing American and Mexican forces in the war of 1846-48. The half dozen pages on the campaign itself are skimpy in the extreme and appear almost as an afterthought.

For figure modellers, therefore, this book represents the normal good value of the 'Men-at-Arms' series, but for the military historian it offers little.

**The Landsknechts**, by Douglas Miller, colour plates by Gerry Embleton. Osprey Publishing Ltd, 12-14 Long Acre, London WC2 9LP. Price £1.75.

THE LANDSKNECHTS, the 'universal soldiers' of the 16th Century, are a military group with a fascination peculiarly their own. Paid mercenaries with a reputation for ferocity only rivalled by the Swiss, they fought for anyone who could afford to pay them and are probably unrivalled anywhere in military history for the colourful flamboyance of their dress. Armed with a mixture of pikes, halberds, two-handed swords and muskets or arquebuses, they fought in most major European battles of the Renaissance era and, although they could turn nasty and desert on the eve of a battle if not paid, were valued by their employers and feared by their adversaries.

This new book, which ideally complements George Gush's superb book *Renaissance Armies 1480-1650*, published last year, does its subject great justice. The origins, organisation, tactics and formations, weapons and campaigns of the Landsknechts are discussed in considerable detail, while Gerry Embleton has done his usual marvellous job on the colour illustrations; there is one we particularly like in which Gerry has depicted himself as a rather dejected-looking Landsknecht playing cards with two jovial characters



who rather remind us of the 'Men-at-Arms' series editor, Martin Windrow, and his brother Richard!

An unusual and welcome inclusion in this volume is a page of Landsknecht flags illustrated in full colour, a feature too often omitted from other titles in this series.

**Napoleon's Dragoons and Lancers**, by Emir Bukhari, colour plates by Angus McBride. Osprey Publishing Ltd, 12-14 Long Acre, London WC2E 9LP. Price £1.75.

THIS LATEST addition to Osprey's 'Napoleonic' range of books within the 'Men-at-Arms' series is sure to be welcomed by all figure modellers, military historians and wargamers. It not only gives the basic required information on uniforms, equipment and horse furniture, but also gives a regiment by regiment breakdown of campaign service, and an admirable insight into the lifestyle of a Napoleonic cavalryman, who frequently owed the army more money for clothes and equipment than he received in pay!

Of particular value to wargamers are the very clear diagrams illustrating cavalry formations on the march and in battle.

Angus McBride's colour illustrations, occupying the centre eight pages, are not only meticulous in their colour renderings but also full of individuality; like many of Gerry Embleton's, many of his figures give the impression of being drawn from life, the disconsolate trooper sitting on a chest and scraping mud (or something even nastier) from his boots whilst simultaneously smoking a large cigar (to take away the smell?) being a masterpiece of its type.

**Military Vehicles of the World**, by Christopher F. Foss. Ian Allan Ltd, Terminal House, Shepperton, Middx. Price £2.95.

THIS LATEST reference work from the able pen of Chris Foss is a detailed guide to today's wheeled and tracked 'soft-skins'. Comprising brief descriptions with data tables and black and white photographs of each. Vehicles of 24 countries are included, ranging from Australia to Yugoslavia. Although useful as a quick reference for military enthusiasts and historians, it is of little practical value for modellers.

**Panzer Colours. Camouflage of the German Panzer Forces, 1939-45**, by Bruce Culver & Bill Murphy. Arms & Armour Press, 2-6 Hampstead High Street, London NW3. Price £4.50.

THIS IS THE book many armour fans will have been waiting for, and all we can say is that the wait was worth it. This book is devoted entirely to the colour schemes used by the German panzers from 1939 to 1945 and if it does nothing else it shows that no rules can be laid down regarding colour schemes used on German tanks! The text does, indeed, state the guidelines laid down by the Army authorities, but the illustrations used show that these rules were rarely followed or else altered to suit local conditions.

The book is mainly photographs, and what photographs they are. Many come from the Bundesarchiv, and are thus clear and full of interest. They have been carefully chosen to illustrate the various colour schemes and methods and not only are the colours covered but also such things as

camouflage using foliage. Every so often there are colour spreads which back up the evidence of the photographs. The overall result is one that will make the book indispensable to modellers and all branches of military enthusiasts.

Even if you have no interest in tank colour schemes there is still much to interest you. The pictures really are superb. Apart from the usual run of tanks, assault guns and half-tracks there are some soft-skin vehicles and some real 'funnies'. There are many odd vehicles such as a CMP truck mounting a 2 cm Flak 30, converted civilian cars towing Flak 38s, and a very odd unexplained photograph of a SdKfz 250 carrying a civilian car on its roof. Almost every photograph has something of interest, and they are full of atmosphere. The number of diorama ideas is immense.

With so many photographs included the text is rather short but it covers all the main points needed and lets the illustrations carry the real message. The only small quibble is that, as so often occurs with books produced in the West, there is an imbalance towards the war in North Africa as opposed to the massive conflict in Russia. One gets the impression that the North African campaigns were as important as the real conflict in the East. But that is only a minor point in a book of this nature. It is a well produced work that will be eagerly sought after by many, and at only £4.50 it is very good value for money. Well recommended.

**War and Weapons**. Sampson Low, Berkshire House, Queen Street, Maidenhead, Berks SL6 1NF. Price £1.75.

PART OF THE 'New Horizon' library, this well produced book is very much one for the younger reader. The text was prepared by the staff of the National Army Museum, and this text is allied to a very pleasing presentation so the book is one that is very attractive. There are numerous illustrations in colour and many photographs and maps. The book is a very basic coverage of warfare and weapons from the times of the Ancients up to the present. As one would expect with such a primer produced for the young reader, the coverage is very basic, but the style is clear and concise. Anyone contemplating a likely present for the 8 to 12 age bracket will do well to bear this book in mind. Indeed the book is so attractive many older readers will want to have it in their library.

**The Guns of World War II**, by Ian V. Hogg. Macdonald and Janes Publishers Ltd, Paul-ton House, 8 Shepherdess Walk, London N1 7LW. Price £4.95.

IAN HOGG has come up with yet another book on artillery, this time dealing with the guns of World War 2 alone. In his bright, easy-to-read style, the author covers the story of artillery from before 1939 up to 1945 and illustrates his story with numerous photographs and drawings. Anyone who has read Ian Hogg's other books on artillery will know what to expect — the well-explained technicalities and explanations are present in this book as ever, and even a novice to the artillery field will find little that he cannot understand.

Apart from the style, the seasoned reader will find other things he will recognise. Many of the photographs have been seen in other books and much of the text has a

familiar ring to it. In fact, the book is a repeat of what has been done before, and unfortunately there is little that is new. One rather gets the impression that all the well-tried ingredients have been put into this book, given a shake-up and rearrangement, and not surprisingly the result is rather less than one would expect. But that is the reaction of one who has read all of Ian Hogg's previous works on artillery. The newer reader will find this book a very good one to introduce him to the subject. As stated above, it is clear, easy to read and there are plenty of illustrations.

Guns dealt with are those of Germany, the UK, the USA and Russia. Japan, Italy and France get very little mention so further reading will be needed to cover those guns, but the balance for the rest is good and comprehensive.

## Motoring

**The Automobile**, by Enzo Angelucci and Alberto Bellucci. Macdonald and Jane's, Paul-ton House, 8 Shepherdess Walk, London N1 7LW. Price £4.95.

HERE, WITHIN 278 large and colourful pages, you will find the history of the automobile, from the wheel to the present day. Whilst the subject is both a popular and (consequently) a well-covered one, this British edition of an originally Italian book should have a strong appeal to the car 'nuts', though the serious historian may jib at its breezy presentation.

Nonetheless, it is good value and compulsively 'browsable', with many really fine illustrations, both in colour and black and white. However, we jibed at the strange 'rusty' (or should it be 'moth-eaten') style of a good proportion of the colour and monochrome drawings, which for us spoil an otherwise delightful book. Some people would not object, but we feel (apart from bearing modellers' best interests in mind) that a good, clean no-frills style of drawing is far preferable.

Despite this, we liked the book a lot, certainly enough to forgive a few errors and omissions (and when don't they creep in in a work of this type?) that include a Vanwall Grand Prix car captioned as a Vauxhall and the absence of one or two British names in an otherwise good list of the world's car museums.

**The Observer's Book of Motorcycles**, by Robert M. Croucher. Frederick Warne & Co Ltd, 40 Bedford Square, London WC1B 3HE. Price 90p.

THE LATEST edition to this excellent series of pocket books is devoted to motorcycles, now an increasingly popular form of transport. This 192-page book represents really first-class value for money: it lists more than 50 manufacturers from 15 different countries. Although, sadly, very few British firms are featured (few still exist!), all the famous makes are included: Honda, Kawasaki, Suzuki, Yamaha, Moto Guzzi, and many, many more. Modellers will find the photos and detailed specifications particularly useful, and there is a brief glossary of terms. Technical information on each bike includes details of engine, transmission, electrics, braking, suspension, dimensions and performance.





# LETTERS TO THE EDITOR

## Marine, 1865

REGARDING the article on the conversion of an Airfix Coldstream Guardsman to that of a Royal Marine Light Infantryman, 1865, by C. I. Davies (May issue), I have no idea of the name of the artist or the origin of the plate on which Mr Davies bases his conversion, but this certainly is not the correct date for this particular figure.

The Royal Marines, in common with most line regiments of the British Army, had the 'slashed' cuff, ie cuff with a flap, until 1868 when the cuffs were altered to a pointed one. The 'slashed' cuff was re-introduced once again at the beginning of the century for the Royal Marine Light Infantry until the amalgamation of 1923. In 1855 the old long-tailed coatee gave way to the double-breasted tunic, which in turn had a very short reign and was replaced by the single breasted tunic one year later in 1856. This remained the basic full dress jacket for the British infantry and Royal Marines until the demise of full dress at the advent of World War 1. Changes occurred in such details as the cuffs, piping on the collar and rear of the coat. The dress in 1865 would have been as follows:

The shako would have been the 1861 pattern. This was faced with blue cloth and stitched across the body in a quilted fashion. It had a black patent band around the bottom and had a narrow black leather chin strap. It was superseded by a similar pattern in 1869, but the body was not stitched as described above and did not have a patent band at the bottom of the crown, or a black leather chin strap. In its place it was furnished with a yellow metal chin chain. Neither shakos had cords. I believe either the original artist, or Mr Davies, has confused the chin scales of the later pattern shako as 'cords'. When the chin scales were not worn under the chin they were carried across the front of the shako and hooked up at the rear.

The equipment as shown in the diagram appears to be some sort of hybrid between the old Crimean type and the 'Improved Pattern' issued in 1868—see the accompanying photographs.

In 1865, the equipment was very much as used in the Crimean campaign, consisting of a pouch belt worn across the left shoulder, the black cartridge pouch being worn behind the right hip; a linen haversack worn across the right shoulder; the blue painted wooden waterkeg was suspended from a brown leather strap slung across the left shoulder, and from the waistbelt was carried the bayonet in a frog on the left hip. The cap

pouch or box was worn on the front of the pouch belt.

The accompanying photograph shows the 1868 pattern equipment which was initially issued with black cartridge pouches which were gradually replaced by white pouches—although it took a number of years for this to become general, some units still had black ammunition pouches during the Zulu War of 1879. The only ammunition pouch to remain black was the large expense pouch which was carried on the right of the belt. The equipment was not webbing, but white buff leather. With the new equipment the valise was slung in the small of the back and the greatcoat carried folded on the shoulders. With the earlier equipment the box-shaped haversack of black oilcloth or canvas was worn independently to the rest of the equipment and carried high on the shoulders.

There is an excellent series of postcards obtainable from the Royal Marine Museum, and amongst them is an RMLI figure of 1865 painted by that excellent military artist, Mr Charles Stadden. He shows the figure exactly as he would have appeared at the date in question. Incidentally, the rank chevrons are white on a blue cloth backing, not gold. The buttons were brass.

I hope this may be of some use to your readers and prevent an enthusiastic modeler from incorrectly dating his figure, as the earliest date that I would put to Mr Davies's description would be 1869/70, disregarding the equipment.

R. J. Marrion, London.



Two views of a Royal Marine Light Infantryman circa 1868 showing the 1861 pattern shako, cuff flaps, 'improved' pattern equipment and other details referred to in Bob Marrion's letter above.

## Contributions

Letters to the editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit, and the publication of photographs from readers is similarly rewarded. Airfix Products Ltd award the kits on the following scale:

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Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

## Frog Penguins

I AM IN THE process of restoring a collection of pre-war Frog Penguin kits, and wondered if I might use your letter page to appeal to your readers for some information?

As far as possible I am finishing the models in the original colours and markings given by Messrs Frog. For the most part they appeared very accurate and were obviously



well researched. However, for the Blackburn Skua they recommended a dazzle pattern of alternative red and silver stripes. The kit was cast in a silver bakelite, so only the red had to be added. I can remember being told at the time that it was a special scheme adopted for Naval exercises in 1939, presumably to facilitate rescue should a plane be forced to land in the sea. I have never though found any confirmation of this. On the other hand, in the September 1974 issue of *Aircraft Illustrated* a Skua is shown in a similar dazzle

pattern, but this time in yellow and black. This was for target towing duties. Can any reader confirm the Frog scheme?

My second query can probably only be answered by your older readers. I have managed to obtain the Penguin Empire Flying Boat, the non-sectional version. To my surprise the cockpit and side window transparencies are in a gloss black material instead of the usual transparent material. Does anyone know if this model was ever issued with normal transparencies, and if

not, why not?

Many of the transparencies on the models I have managed to collect are stained a dirty yellow colour, which is hardly surprising seeing their age. I have tried all the usual methods to clean them, ie polishing with toothpaste, etc, but nothing seems to work. Any suggestions? They are very brittle so I hesitate to use any violent measures!

I am enclosing a photo of the Penguin Short Singapore in the hope that it may be of interest to your younger readers who may not appreciate the very high standards that Messrs Frog set. I would stress that the model is shown *before* restoration, but even then the very fine detail in the machine-gun, propellers, etc, is very evident. Not bad for a model that is now some 40 years old!

Vagn Engholm, Sharpe House, Wiveliscombe, Taunton, Somerset.

## Finnish armour

I READ WITH great interest the article about Finnish tanks in the May issue, but there are a few minor errors I would like to correct. These are probably mainly due to the language because the main reference mentioned in the text is written in Finnish.

First, two Fiat armoured cars were captured from the 'Reds' in the War of Independence when Finland finally won free of Russia. The 'Reds' had got these cars from Russia in 1918.

Second, the HUR (Hyökkäysavurnurkmentti) was set up on July 15 1919.

Third, the total number of Vickers 6-tonners was 33.

Fourth, the one and only Landsverk

Continued on page 54

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armoured car served in the Mootl. Os./RuPr (Motorised unit/cavalry brigade).

Fifth, the name of the tank regiment changed several times before the war. Here are the dates and new names: January 1 1925 — Hyökkäysvakuutuslaitos; May 1 1927 — Hyökkäysvakuutuslaitos; November 1 1929 — Erillinen Hyökkäysvakuutuslaitos; December 30 1937 — Er.Pans.K (Erillinen Panssarikomppania); December 5 1939 — Pans.P (Panssaripataljoona). In March 1939 Er.Pans.K et up 1, 2, 3 and 4 Pans.K. These units should have been fighting in the Winter War, but only 4 Pans.K (=4/Pans.P) saw action. This was at Honkaniemi on February 26 1940.

Sixth, the first BT-42 'assault guns' were ready in late 1942.

Seventh, six ITPSV 40 Landsverk AA-tanks were bought in March 1942.

Eighth, Stu-40s were bought in 1943. First Sturmis came to Varkaus on July 10 of that year. A total of 30 Sturmis arrived in 1943 and more the following year (the 1944 Stu-40s were fitted with Saukopf mantlets).

Ninth, 18 PzKpfw IVs were bought in 1944, but they arrived too late to see any action. (Note: no German tanks were transferred to the Finns. The 303 Assault Gun Brigade just fought with them.)

Finally, the guy who got 11 kills was O. Soimela.

I will not comment on the AFV camouflage

and markings, because no waterproof evidence about exact colours exists. The national swastika insignia was mostly black, but blue ones did exist (the lower BA-32 should have a blue swastika with the shadow on the left side). The shadow was usually on the right side and was of variable width.

Readers should take care in interpreting the drawings. For instance, the first T-26E on page 520 actually has '52' on the turret and the colours are something like green and buff (not white!). Number 8, the T-130 (flamethrower) has, to my knowledge, '74' on its bow plate.

Last but not least I would like to warn everybody visiting Parola that the camouflage schemes are not accurate. Esa Muikku, IPMS Finland.

### Modelling societies

READERS in the Cheshire area will be pleased to hear of the formation of the Mid-Cheshire Military Modelling Society, which had its inaugural meeting on June 19. For further details send an SAE to Mr D. Rustage, 28 Mere Lane, Cuddington, Northwich.

Similarly, the Bedford Military History Society has been holding regular meetings ever since January on Tuesday evenings from 7 pm at the Fox and Hounds, Clapham, Nr Bedford. The club has large modelling and wargaming sections and

organises exhibitions and visits to events of military interest. For further details send an SAE to John Preece, 46 The Grove, Bedford, or telephone 66860.

The North Wakefield Wargames Society meets every Sunday at the Shelley School of Dancing, opposite Tesco's, in Kirkgate, Wakefield, every Sunday at 2 pm. For further information send an SAE to Raymond Kershaw, 52 Primrose House, Kirkgate, Wakefield, Yorks.

The Montreal Military Miniature Society, in collaboration with the Montreal Wargames Association, announce 'Militaria 76', a military miniatures convention, to be held in Montreal at the 'Old Fort', St Helens Island, on Saturday, October 2. It will include competitions, wargames, displays, films, trade stands, lunch, prizes, etc. Full details may be obtained from Peter Pym-Hember, 1366 Berthier Street, Chambly, Quebec, Canada J3L-3A4.

Devon Library Services (South) are adventurously organising a junior military modelling competition this summer. It will be open to all children under the age of 14 living in South Devon, and entry forms are available from most local libraries so get yours now! Judging will be done locally with the finals at the Torbay Military Modelling Society's exhibition at Torquay Town Hall on Saturday, October 30. Closing date for entries is October 2.

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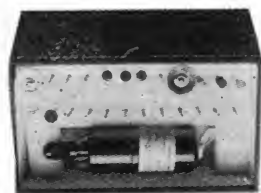
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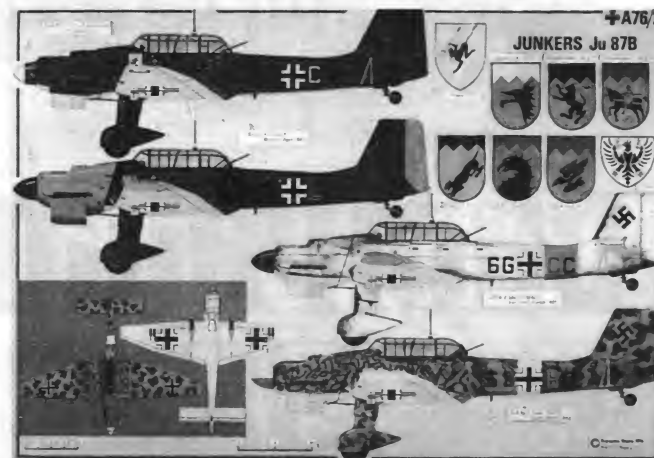
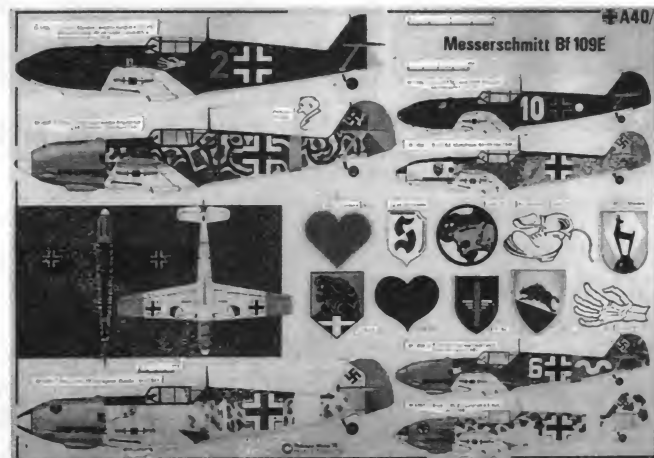
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Edited by Bruce Quarrie

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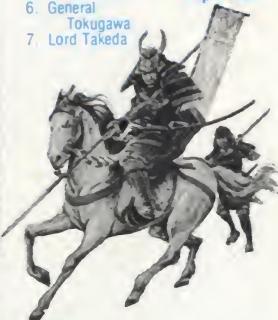
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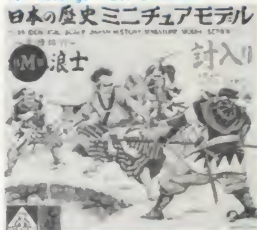
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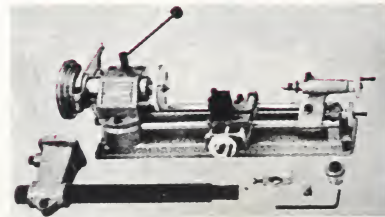
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